ISSN 0700-2645

Annual Report
March 31st
1983

Alberta
ENERGY AND
NATURAL RESOURCES

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ENERGY AND
NATURAL RESOURCES

File No.

Petroleum Plaza, South Tower, 9915 - 108 Street, Edmonton, Alberta, Canada T5K 2C9 Telex 037-3676

RE: ANNUAL REPORT, MARCH 31, 1983: ALBERTA ENERGY AND NATURAL RESOURCES
(ISSN 0700-2645)

ERRATUM

1. **Page 27**
column 1, paragraph 2:

"Royalty, mineral tax and crude oil export revenues for the year were $4.85 billion, an increase of $205 from 1981/82."

should read:

"Royalty, mineral tax and crude oil export revenues for the year were $4.85 billion, an increase of $205 **million** from 1981/82."

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EDMONTON

ENR Report No. 1/2 - 82/83
International Standard Book Number: 0-86499-109-6
International Standard Series Number: 0700-2645

For additional copies, contact:
Alberta Energy and Natural Resources
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Alberta
ENERGY AND NATURAL
RESOURCES

Office of the Minister

407 Legislature Building, Edmonton, Alberta, Canada T5K 2B6 403/427-3740

October 20, 1983

To His Honor
Frank Lynch-Staunton
Lieutenant Governor of the
Province of Alberta

Sir:

I have the honor to submit the Annual Report of the Department of Energy and Natural Resources for the fiscal year ended March 31st, 1983.

Respectfully submitted,

JOHN ZAOZIRNY
Minister of Energy and Natural Resources

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The Department

RESPONSIBILITIES

The ministry is responsible for the administration and management of Alberta's energy and natural resources: energy, minerals, forests, public lands and fish and wildlife.

These responsibilities include advice to the minister on policies and programs of energy and renewable resources, the two major sectors of the department. The Energy Resources Sector applies sound management practices to ensure the largest and most efficient recovery of a depleting resource as well as maximum royalty revenues for the province. The Renewable Resources Sector is charged with the efficient development and planned reforestation of Alberta's forests, the management of public lands and the management of the fish and wildlife resources for the continued benefit of the province.

ORGANIZATION

The department organization is shown through the accompanying organization chart. There were 2 651 authorized permanent positions on March 31, 1983. The total 1982/83 expenditure authority was $572 million.

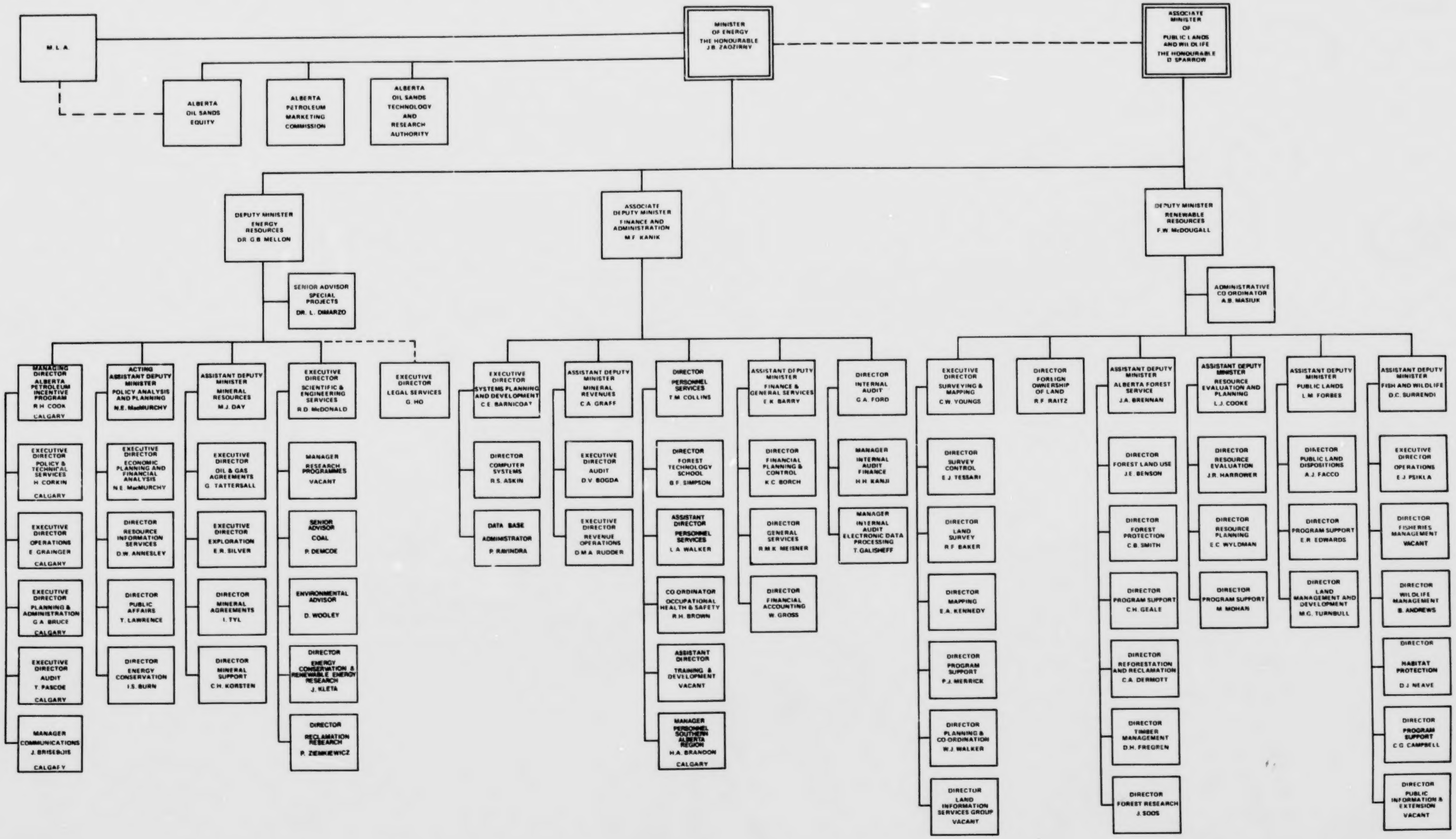
There are 16 divisions reporting to two deputy ministers and one associate deputy minister. Alberta Oil Sands Equity, Alberta Oil Sands Technology Research Authority and the Alberta Petroleum Marketing Commission report directly to the minister. Alberta Oil Sands Equity's activities are reported through the annual report of Energy and Natural Resources while the latter two report their activities to the minister through separate annual reports.

Highlights 1982/83

- January 1, 1983 was a key date for provisions of the Mines and Minerals Act enacted in 1976, relating to the reversion to the Crown of petroleum and natural gas rights below the base of the deepest productive zone in continued Petroleum and Natural Gas (P&NG) leases with initial terms of 10 and 21 years. Lessees of more than 14 000 leases were simultaneously notified as to which deeper rights had reverted to the Crown and the records of the department were amended quickly to allow the reverted rights to be disposed of through Crown sales.
- A downturn in the coal industry was reflected in 104 coal leases returned to the Crown, coal rental payments decreasing from $4.4 million to $4.3 million and the industry spending only $13 million in exploration, down 42 per cent from the previous year.
- A Development Drilling Incentive Supplement was announced August 13, 1982 to provide immediate assistance to the Alberta-based petroleum drilling industry. This extended the existing Exploratory Drilling Incentive System to all Crown wells drilled in Alberta from August 15, 1982 to December 31, 1982. Grants amounted to $160.6 million paid on 2 076 wells.
- The Policy Analysis and Planning Division undertook the lead role in the development and coordination of analysis leading to the royalty reductions contained in the April 13, 1982 Alberta Oil and Gas Activity Program.
- In its first full operating year the Alberta Petroleum Incentives Program has become an integral part of the oil and gas industry, distributing more than $326 million in incentives.
- Fire suppression costs for 1982/83 were $75 million for 1 285 fires. Five per cent of these fires burned 680 000 hectares while 95 per cent burned only 200 hectares.
- Alberta's forest industries operated at about 75 per cent of normal production despite the depressed forest products market conditions. Incentive programs for timber operators and deferrals of royalties helped industry cope with the recession.
- The Fish and Wildlife Policy for Alberta was formulated and accepted by the government. Now in the implementation stage, the policy will be complemented by the Fish and Wildlife Resource Plan for Alberta, which is being prepared. Extensive public consultation is planned relative to the further interpretation of the policy as well as the development of the resource plan. In association with the above, the Wildlife Act is being redrafted.
- The Alberta Conservation Hunter Education Program won top place in North America for programs as judged by the National Rifle Association.
- The Fish and Wildlife Division established a Resource Economics and Assessment Section to help ensure cost-effectiveness of programs and provide technical expertise in the area of socioeconomics.
- Public lands were made available for the new Gulf Sour Gas Plant in the Obed area and a paper mill by B.C. Forest Products Ltd. near Whitecourt.
- Development of grazing reserves involved contracts covering 65 000 hectares (162 000 acres) and costing $5.89 million, $3.94 million of which was funded by the Alberta Heritage Savings and Trust Fund.
- Demands for resource mapping increased greatly with the Alberta Forest Inventory Mapping Program paramount. Computer graphics technology was introduced by the department. A record 95 213 square kilometres was mapped at a scale of 1:15 000 for the Phase 3 Forest Inventory Program.
- Development of the first release of the Land Status Automated System (LSAS) was achieved, covering the preliminary land standing capability for surface dispositions. This development will continue until the last release of LSAS occurring in mid-1985.
- ENR Information Centre opened in Bramalea Building to give improved public access to publications, hunting and fishing licences, timber permits, and to answer queries.
- Mineral Revenues Division was reorganized into four areas, Revenue Operations, Audit, Program Support and the Well Servicing Incentive Program. Revenue Operations comprises Petroleum Royalty, Natural Gas Royalty, Freehold Mineral Tax, Coal and Other Royalties, and Financial Research and Development.

Organization Chart — Alberta Energy and Natural Resources

Alberta Energy & Natural Resources
Organization Chart


M.L.A.
MINISTER OF ENERGY THE HONOURABLE J.B. ZAOZIRNY
ASSOCIATE MINISTER OF PUBLIC LANDS AND WILDLIFE THE HONOURABLE D SPARROW
ALBERTA OIL SANDS EQUITY
ALBERTA PETROLEUM MARKETING COMMISSION
ALBERTA OIL SANDS TECHNOLOGY AND RESEARCH AUTHORITY
DEPUTY MINISTER ENERGY RESOURCES DR G.B. MELLON
ASSOCIATE DEPUTY MINISTER FINANCE AND ADMINISTRATION M.F. KANIK
DEPUTY MINISTER RENEWABLE RESOURCES F.W. McDOUGALL
SENIOR ADVISOR SPECIAL PROJECTS DR. L. DIMARZO
ADMINISTRATIVE CO ORDINATOR A.B. MASIUK
MANAGING DIRECTOR ALBERTA PETROLEUM INCENTIVE PROGRAM R.H. COOK CALGARY
EXECUTIVE DIRECTOR POLICY & TECHNICAL SERVICES H. CORKIN CALGARY
EXECUTIVE DIRECTOR OPERATIONS E. GRAINGER CALGARY
EXECUTIVE DIRECTOR PLANNING & ADMINISTRATION G.A. BRUCE CALGARY
EXECUTIVE DIRECTOR AUDIT T. PASCOE CALGARY
MANAGER COMMUNICATIONS J. BRISEBOIS CALGARY
ACTING ASSISTANT DEPUTY MINISTER POLICY ANALYSIS AND PLANNING N.E. MacMURCHY
EXECUTIVE DIRECTOR ECONOMIC PLANNING AND FINANCIAL ANALYSIS N.E. MacMURCHY
DIRECTOR RESOURCE INFORMATION SERVICES D.W. ANNESLEY
DIRECTOR PUBLIC AFFAIRS T. LAWRENCE
DIRECTOR ENERGY CONSERVATION I.S. BURN
ASSISTANT DEPUTY MINISTER MINERAL RESOURCES M.J. DAY
EXECUTIVE DIRECTOR OIL & GAS AGREEMENTS G. TATTERSALL
EXECUTIVE DIRECTOR EXPLORATION E.R. SILVER
DIRECTOR MINERAL AGREEMENTS I. TYL
DIRECTOR MINERAL SUPPORT C.H. KORSTEN
EXECUTIVE DIRECTOR SCIENTIFIC & ENGINEERING SERVICES R.D. McDONALD
MANAGER RESEARCH PROGRAMMES VACANT
SENIOR ADVISOR COAL P. DEMCOE
ENVIRONMENTAL ADVISOR D. WOOLEY
DIRECTOR ENERGY CONSERVATION & RENEWABLE ENERGY RESEARCH J. KLETA
DIRECTOR RECLAMATION RESEARCH P. ZIEMKIEWICZ
EXECUTIVE DIRECTOR LEGAL SERVICES G. HO
EXECUTIVE DIRECTOR SYSTEMS PLANNING AND DEVELOPMENT C.E. BARNICOAT
DIRECTOR COMPUTER SYSTEMS R.S. ASKIN
DATA BASE ADMINISTRATOR P. RAVINDRA
ASSISTANT DEPUTY MINISTER MINERAL REVENUES C.A. GRAFF
EXECUTIVE DIRECTOR AUDIT D.V. BOGDA
EXECUTIVE DIRECTOR REVENUE OPERATIONS D.M.A. RUDDER
DIRECTOR PERSONNEL SERVICES T.M. COLLINS
DIRECTOR FOREST TECHNOLOGY SCHOOL B.F. SIMPSON
ASSISTANT DIRECTOR PERSONNEL SERVICES L.A. WALKER
CO ORDINATOR OCCUPATIONAL HEALTH & SAFETY R.H. BROWN
ASSISTANT DIRECTOR TRAINING & DEVELOPMENT VACANT
MANAGER PERSONNEL SOUTHERN ALBERTA REGION H.A. BRANDON CALGARY
ASSISTANT DEPUTY MINISTER FINANCE & GENERAL SERVICES E.K. BARRY
DIRECTOR FINANCIAL PLANNING & CONTROL K.C. BORCH
DIRECTOR GENERAL SERVICES R.M.K. MEISNER
DIRECTOR FINANCIAL ACCOUNTING W. GROSS
DIRECTOR INTERNAL AUDIT G.A. FORD
MANAGER INTERNAL AUDIT FINANCE H.H. KANJI
MANAGER INTERNAL AUDIT ELECTRONIC DATA PROCESSING T. GALISHEFF
EXECUTIVE DIRECTOR SURVEYING & MAPPING C.W. YOUNGS
DIRECTOR SURVEY CONTROL E.J. TESSARI
DIRECTOR LAND SURVEY R.F. BAKER
DIRECTOR MAPPING E.A. KENNEDY
DIRECTOR PROGRAM SUPPORT P.J. MERRICK
DIRECTOR PLANNING & CO-ORDINATION W.J. WALKER
DIRECTOR LAND INFORMATION SERVICES GROUP VACANT
DIRECTOR FOREIGN OWNERSHIP OF LAND R.F. RAITZ
ASSISTANT DEPUTY MINISTER ALBERTA FOREST SERVICE J.A. BRENNAN
DIRECTOR FOREST LAND USE J.E. BENSON
DIRECTOR FOREST PROTECTION C.B. SMITH
DIRECTOR PROGRAM SUPPORT C.H. GEALE
DIRECTOR REFORESTATION AND RECLAMATION C.A. DERMOTT
DIRECTOR TIMBER MANAGEMENT D.H. FREGREN
DIRECTOR FOREST RESEARCH J. SOOS
ASSISTANT DEPUTY MINISTER RESOURCE EVALUATION AND PLANNING L.J. COOKE
DIRECTOR RESOURCE EVALUATION J.R. HARROWER
DIRECTOR RESOURCE PLANNING E.C. WYLDMAN
DIRECTOR PROGRAM SUPPORT M. MOHAN
ASSISTANT DEPUTY MINISTER PUBLIC LANDS L.M. FORBES
DIRECTOR PUBLIC LAND DISPOSITIONS A.J. FACCO
DIRECTOR PROGRAM SUPPORT E.R. EDWARDS
DIRECTOR LAND MANAGEMENT AND DEVELOPMENT M.G. TURNBULL
ASSISTANT DEPUTY MINISTER FISH AND WILDLIFE D.C. SURRENDI
EXECUTIVE DIRECTOR OPERATIONS E.J. PSIKLA
DIRECTOR FISHERIES MANAGEMENT VACANT
DIRECTOR WILDLIFE MANAGEMENT B. ANDREWS
DIRECTOR HABITAT PROTECTION D.J. NEAVE
DIRECTOR PROGRAM SUPPORT C.G. CAMPBELL
DIRECTOR PUBLIC INFORMATION & EXTENSION VACANT

MARCH,31/83.

Alberta Oil Sands Equity

Report of the Chairman
T. R. VANT

Alberta Oil Sands Equity manages Alberta's investment in the Syncrude Project and in an exploration and evaluation program on six oil sands leases in Northeastern Alberta. At March 31, 1983 there were 10 people on staff.

The production from the Syncrude Project was 5.96 million cubic metres of synthetic crude oil during the fiscal year ending March 31, 1983, which is an increase of one million cubic metres over the previous year. In late August the utilities plant failed, which led to a shutdown of both cokers. Coker 8-1 which was shut down September 6, 1982 had been in continuous operation for 16 months, the longest coker run to date. Both cokers were started up in October and were in operation March 31, 1983.

A major milestone was achieved July 29, 1982 when 100 million barrels of synthetic crude oil had been shipped from the Syncrude Project.

In August, 1982 the Syncrude owners approved the first phase of the Debottleneck Program which is expected to increase production by 1 589 cubic metres per day. This program will cost approximately $180 million and will be completed in 1985. In addition, at year end the owners were considering an aggressive capital investment program designed to increase the production of synthetic crude oil to 20 660 cubic metres per day.

Alberta's 16.74 per cent investment in the Syncrude Project produced a net profit of $68 717 000 for the fiscal year ending March 31, 1983. Since Alberta is not paying the Petroleum and Gas Revenue Tax the above profit numbers do not include provision for such tax. On March 31, 1983, Alberta's investment in the project amounted to $411 344 000, consisting of capital provided by the Alberta Heritage Savings Trust Fund of $292 802 000 and accumulated profits of $118 542 000.

The evaluation program on six oil sands leases in Northeastern Alberta continued. This program will gather the necessary information to allow the owners to make a decision on commercial development of the leases by the late 1980s.

Alberta Petroleum Incentives Program

Report of the Managing Director
R. H. COOK

In its first full year of operation, the Alberta Petroleum Incentives Program (APIP) has become an integral part of the oil and gas industry as well as an important factor in the province's plans to stimulate resource activity. APIP, like other Alberta incentive programs, was designed to contribute to the economic health of the province. By distributing more than $326 million in incentives on applications during the 1982/83 fiscal year, APIP is meeting its goal of encouraging exploration and development. APIP had 122 permanent employees as of March 31.

APIP's objectives are similar to those of other ENR programs but the extent of its funding and client base differ.

Costs and expenses eligible for APIP funding are directly parallel to the Income Tax Act definitions of Canadian Exploration Expense (CEE) and Canadian Development Expense (CDE). APIP pays on the widest range of expenses of all the Alberta government incentive programs. Eligible applicants can be reimbursed to a maximum of 35 per cent for their incurred exploration expenses and 20 per cent for their development or tertiary asset costs.

While other Alberta government programs have universal eligibility, APIP is discriminatory in that eligible applicants must be at least 50 per cent owned and controlled by Canadians. The percentage of funding received by the applicants is proportional to their Canadian ownership. Presently, 95 per cent of APIP applicants have a Canadian ownership rate over 67 per cent and therefore receive the highest level of incentives.

To date, APIP has 2 249 registered applicants, a group composed of corporations, individuals, partnerships and trust funds. By the end of the fiscal year, 84 per cent of applicants had submitted at least one application to receive $252.5 million in incentives on exploration expenses, $40.1 million on development expenses and $33.5 million on other costs (including asset costs; geological, geophysical and geochemical expenses; unit agreements and drilling contribution expenses).

APIP was fully operational as of May, 1982. At that time, the APIP Regulation was passed by Cabinet, notices that application forms were available were sent to potential applicants and, within a month, the first completed application was received. In June the first cheque was issued.

APIP has six branches: Operations, Policy and Technical Services, Planning and Administration, Audit, Communications and Personnel.

OPERATIONS BRANCH

In the Operations Branch, an application is assessed, processed and approved for payment. During the year, systems were developed and a procedures manual written. As operations staff handled an increasingly large volume of applications, they made numerous changes and improvements to procedures and systems which greatly reduced turnaround time for assessing applications.

POLICY AND TECHNICAL SERVICES BRANCH

When an application presents a technical, interpretive problem or requires policy review, assistance is provided by the Policy and Technical Services Branch which is divided into two sections: Policy and Rulings, and Technical Services.

One of the main functions of policy and rulings is to interpret the regulation and to recommend policies. During the year, a body of interpretations derived from the legislation was created by the Policy and Rulings Section and, in November, the regulation was appropriately amended. Over the fiscal year, 19 policies, 127 ministerial discretions and 386 interpretations were isssued.

The Technical Services Section is composed of geologists, a geophysicist, a landman and a drilling specialist who advise APIP on technical matters. Technical Services staff assist with the assessment of applications which contain technical problems. This work, along with that of policy and rulings, speeds up the assessment of applications and helps develop policies that make APIP more responsive to changes within the industry.

During the year, the section's technical specialists trained in-house staff and provided assistance on 2 686 technical inquiries.

PLANNING AND ADMINISTRATION BRANCH

After an application has been cleared by the operations branch, it is sent to the Planning and Administration Branch for final processing.

Planning and Administration's Financial Planning and Control Section's accountants requisition a cheque from Alberta Treasury and handle payments assigned to a bank or waived against the federal Petroleum and Gas Revenue Tax (PGRT). They worked with Treasury to streamline the processing of cheques and have helped develop the systems required.

Planning and Administration was responsible for the amalgamation of APIP from two buildings to permanent headquarters. The branch looks after word processing, photocopying, mail distribution and security.

The computerization of APIP is also part of Planning and Administration's mandate. To date, all

APIP systems have been manual. The goal during the year was to refine manual systems and to build computer procedures to improve the handling of applications. Systems and Procedures Section developed an automation project which will see installation of a computer early in the 1983 fiscal year. Site specifications have been drafted for the computer and manuals prepared to assist the conversion.

APIP's operations are monitored by Planning and Administration's Program Planning and Evaluation area. Statistics are generated to provide management with the analysis and data required to ensure efficient operations. Program Planning and Evaluation also helped develop the Alberta Petroleum Activity Model for the forecasting of incentive expenditures.

AUDIT BRANCH

Once applicants have received their incentive cheques they may be subject to audit. Each applicant can, over the life of the program, expect to be audited at least once. During the past year, audit's main objective has been to safeguard the spending of public funds while assisting applicants in receiving all the grants due to them.

The audit branch consists of one team of staff auditors, one contract team from Touche Ross & Co. and one from Clarkson Gordon. During the year, audit carried out pre- and post-audits of 150 applications.

COMMUNICATIONS BRANCH

Communications staff provide industry with the information necessary to complete their applications efficiently. Through the *Application Guide*, newsletters containing interpretations and technical information, and the co-ordinating of an inquiries section, Communications informs applicants of changes and assists them in dealing with the program.

Public speeches and seminars were produced for such diverse groups as tax and resource accountants, geologists, geophysicists and landmen.

PERSONNEL BRANCH

Personnel officers were responsible for hiring, commencing and training of all staff. Most employees were in place and had received at least one course by June of 1982.

Few of the new staff had experience with the technical aspects of the oil and gas industry. Personnel ran courses for the entire organization covering technical, governmental and in-house subjects, and distributed training manuals to assist new personnel in achieving a standard level of knowledge of the industry.

Policy Analysis And Planning Division

Report of the Acting Assistant Deputy Minister

N. E. MacMURCHY

The Policy Analysis and Planning Division is responsible for the co-ordination of all department matters relating to economic and financial services, resource information services and energy conservation. This includes providing resource and financial information on specific resource projects, resource revenue policies, revenue forecasting, industry revenue and the assessment of the effect of royalty and tax regimes in Alberta's resource industries. In addition, it involves the gathering and dissemination of information relating to energy and renewable resources and energy conservation, encompassing library services, publications, and public education and awareness programs.

The division is divided into the Economic Planning and Financial Analysis Group, the Resource Information Services Branch and the Energy Conservation Branch. Public Affairs comprises a permanent staff of eight seconded from the Public Affairs Bureau.

The permanent staff count for the division was 50, as of March 31, 1983.

ECONOMIC PLANNING AND FINANCIAL ANALYSIS BRANCH

The Economic Planning and Financial Analysis Branch is responsible for providing analysis and interpretation of economic and financial data relating to the province's energy and natural resources for input into the formation and administration of relevant government policies.

The group comprises three sections: Financial Analysis, Economic Planning, and Resource Economics and Utilization.

The activities of the groups included: (1) provision of background information to the minister of Energy and Natural Resources and to senior department officials; (2) the analysis of energy policy proposals analysing economic impacts on the energy industry, the Albertan and Canadian economies, and the federal and provincial governments; and (3) assistance in the development of policy by examining the economic and financial implications of various policy alternatives being considered.

The Financial Analysis Section is responsible for the financial evaluation of major energy projects, analysis with respect to royalty and taxation policy, and the forecasting of provincial energy resource revenues. Related work done by the section includes evaluation of the distribution of energy revenues among governments and industry, analysis of the financial state of the energy industry in Canada and monitoring of the national and international climate for new investment.

In the past year, this section conducted a wide range of related analyses including:

- Evaluation of proposals for heavy oil upgraders. Development of a fiscal regime for a small-scale in situ oil sands project.
- Analysis of the pricing, marketing and royalty treatment of ethane.
- Monitoring and forecasting of industry activity on the Canada Lands (federally-administered lands).
- Evaluation of royalty and taxation alternatives for the Alberta Oil and Gas Activity Program.
- Estimation of short- and long-term energy revenues and revenue distribution.

The Economic Planning Section conducts economic analysis and generates recommendations concerning the pricing of energy resources, the impact on the economy of various energy policies and projects, the forecasting of demand for energy resources and other economic analyses required by the department in its development and administration of energy and other natural resources policies.

During 1982/83, the Economic Planning Section activities included:

- Monitoring of international energy prices and examining the implications of these prices to Canada and Alberta.
- Analysis of demand for energy, especially Alberta crude oil and natural gas in Canada under various policy alternatives.
- Examination of energy demand in the United States, with the view of determining market potential for Canadian natural gas.
- Continued support of the Alberta Energy Resources Allocation model developed by the Alberta Research Council, and considerable investment in the preparation of a 1982 base case based on this model.
- Participation with Alberta Economic Development in examining coal slurry pipelining as a means of transporting Alberta coal to the Pacific Ocean.
- Participation with Alberta Petroleum Incentives Program in development of a basis for forecasting conventional oil and gas investment expenditures in Alberta.
- Participation with Alberta Treasury, the Alberta Energy Resources Conservation Board and the Alberta Petroleum Marketing Commission in a series of committees relating to the forecasting of supply, demand and pricing of Alberta's energy resources.

The Resource Economics and Utilization Section is responsible for the generation of policy analysis and recommendations on the supply of hydrocarbons, mineral royalty development, the technical and economic viability of major resource projects and developments in the production, processing, distribution and marketing of energy resources.

In the past year, the section:

- Undertook the lead role in the development and co-ordination of analyses leading to the royalty reductions contained in the April 13, 1982 Alberta Oil and Gas Activity Program.
- Developed, with assistance from other divisions, the Well Service Incentive Program.
- Participated in the development of the Development Drilling Incentive System.
- Undertook a major role in a review of the package of oil and gas incentive programs provided by the Alberta government.
- Developed, with the assistance of other divisions and industry, the revised guidelines for enhanced oil recovery relief announced October 18, 1982.
- Represented the department at meetings with Energy, Mines and Resources and the National Energy Board, including the Energy Supplies Allocation Board.
- Participated in a major intergovernmental task force report on energy demand restraint conducted by the Inter-Provincial Advisory Council on Energy.
- Participated in interdepartmental committees on crude oil supply, with a particular emphasis on the shut-in oil problem.

RESOURCE INFORMATION SERVICES BRANCH

The Resource Information Services Branch develops and distributes technical and general information for the public and department. The branch provides services in the areas of Library, Publications, Resource Intelligence, and the department's Information Centre.

During the fiscal year under review, plans were made to transfer several of the functions of the Resource Information Services Branch to other areas, principally Public Affairs, and to change the role of the branch to one dealing more in policy analysis and statistics. None of the proposed changes was implemented in the fiscal year under review.

The Library provides technical reference and general information services for department staff and others with technical reference requirements in the program areas administered by the department.

The Publications Section assists in the planning, production and distribution of department publications, with emphasis on technical publications.

Resource Intelligence gathers information by reviewing the scientific, business and industrial media as well as Alberta and other Canadian dailies and a selection of Alberta weekly newspapers. The information is circulated as is, or analysed for implications to Alberta and separate reports are developed for management. In addition, this section responds to requests for information received from the public and develops material to answer those requests.

A new Information Centre was established on the main floor of the Bramalea Building, to provide the public with a focal point when approaching the department or trying to find information about its programs. In operation since November, the centre displays and distributes all the department's publications and answers hundreds of information requests each month. In the next fiscal year the sale of permits and licences will be added to the services offered by the Information Centre.

Highlights of the branch operations for the year included:

- The completion of a portfolio on all Alberta's energy resources and the first in its series of booklets, on conventional oil.
- Establishment of the department Information Centre.
- Establishment of a warehouse service for the department's publications. The warehouse receives printed materials directly from printers and ships box-load quantities to various distribution points.
- Commencement of the conversion of the Library's cataloguing system to an electronic data base. This conversion will provide more rapid access to catalogue files, assist in development of bibliographies and allow searches in the data bases of others on the same system. It will provide a much more in-depth service to the department.
- Completion of an oil sands display in the Canadian pavilion at the World's Fair on energy in Knoxville, Tennessee. Following the six-month use at the World's Fair, the oil sands display was sent to Man And His World in Montreal where it will be exhibited during the summer of 1983.

PUBLIC AFFAIRS

The public relations, advertising, communications planning, media contact, and production of ENR communications materials are the responsibility of this branch.

At the end of the fiscal year plans were underway to add the Publications Section and ENR Information Centre of Resource Information Services to Public Affairs. When complete, this action will represent a major change in departmental communications activity.

Several significant innovations were also brought to the public information program of the department during the 1982/83 fiscal year:

- A philosophy of program-based communications planning and application was adopted.
- All Public Affairs officers were assigned specific divisional responsibilities.
- The communications issues management approach instituted in the 1981/82 year was expanded and now includes an issue response document mechanism.

The range and complexity of the projects handled by the branch increased significantly during the year. In excess of 250 communications activities were handled at any given time. The assignment of Public Affairs officers to the divisions led to a better understanding of division and branch requirements and to greater involvement in the program delivery process.

Highlights of the year's activity included:

- Participation in the communications component of the Public Involvement Program undertaken by the Resource Evaluation and Planning Division.
- Design and publication of the Fish and Wildlife Division's policy document.
- Reorganization of and a new design for exploration activity histograms reporting land sale activity, drilling activity and incentive program performance.
- The pre-publication design, distribution and content work necessary to publish an ENR magazine. Fiscal restraint has led to an indefinite delay in the project.
- A pamphlet entitled *The Facts on Canada's Gasoline Prices* was designed and distributed to a broad spectrum of the Canadian business and political community.
- A newsletter for the Finance and General Services Division dealing with the Land Status Automated System (LSAS) was designed and the first issue published.
- *Forests for the Future,* a documentary film dealing with the Pine Ridge Forest Nursery, was completed and premiered during National Forest Week.
- More than 500 000 copies of the Alberta Energy Savers Series how-to booklets were produced and distributed in co-operation with the Energy Conservation Branch.

In addition, the branch managed the preparation and production of many other films, audio-visual presentations, books, brochures, pamphlets, advertising campaigns and public relations programs for the department.

ENERGY CONSERVATION BRANCH

The Energy Conservation Branch is responsible for the development and implementation of awareness, information and education programs emphasizing the efficient use of energy. The branch works closely with other Alberta government departments and agencies, other provincial governments, the federal government and energy utilities in order to minimize program duplication and to share materials or offer joint programs where practical.

In conjunction with these other agencies, the branch offers technical assistance in the evaluation of potential programs, policies, incentives or regulatory revisions which are directed toward increasing energy efficiency.

During 1982/83, the branch carried out three main functions involving direct services to identified target sectors: (1) Industrial Energy Conservation Program, aimed at business, industry and institutions; (2) residential and transportation conservation programs aimed at households; (3) school conservation programs for school children and teachers.

(1) This was the second full year of operation for the Industrial Energy Conservation Program which has a continuing objective to increase awareness in business and industry of the opportunities for reducing operating costs by using energy more efficiently. The program includes an energy audit service offered on request at no charge to businesses, industries and institutions which consume large amounts of energy. In 1982/83, 146 audits were conducted in all regions of the province. Facilities audited include manufacturing plants, agricultural installations, commercial buildings, recreational facilities and institutional complexes. Total energy use at these facilities was more than 2.7 petajoules (PJ) per year, representing an annual cost of more than $12 million (based on energy costs at the time of the audits). Of this total, recommendations concentrating on simple measures to reduce energy use accounted for total potential energy savings of 27 per cent for a cost reduction of 22 per cent or $2.6 million per year at the facilities audited. A portion of the program expenses was reimbursed to Alberta by the federal government under the terms of a cost-sharing agreement.

reimbursed to Alberta by the federal government under the terms of a cost-sharing agreement.

A second energy audit vehicle, a van, was equipped with measuring instruments and a portable computer. This new unit will become operational during 1983/84 and will assist in meeting the increasing demand for energy audits by serving small business establishments.

The proposed federal-provincial National Energy Audit Program was evaluated and is presently being negotiated.

Other Industrial Energy Conservation Program activities included 30 presentations to conferences, seminars, business and industry groups; program-related advertising; interdepartmental liaison; acquiring technical information; assisting with energy conservation efforts in department facilities; and reviewing energy efficiency aspects of Energy Resources Conservation Board industrial development permit applications.

As a new activity in 1982/83, a follow-up program was developed to remind previous clients of energy audit results and to collect information on energy management activities since the audits were completed.

(2) The branch's residential and transportation programs have concentrated on developing, distributing and promoting information materials for the general public and the building trades.

During 1982/83, 500 000 copies of the Energy Savers Series how-to booklets were distributed via 566 hardware and building supply stores and 137 other outlets.

A new program was the development of the Energy Savers Workshop. This hands-on workshop introduces the concept of payback on energy conservation investments in the home while exposing participants to a large number of devices and approaches relating to reducing utility costs. A total of 50 workshops was offered in 15 Alberta centres.

The branch participated, with the Department of Housing, the Alberta Educational Communications Corporation (ACCESS), Saskatchewan Mines and Minerals and SaskMedia, in developing a series of 12 videotapes on energy-efficient new house construction and on improvements to existing homes. These will be used in post-secondary educational facilities throughout the province.

Other activities included a general advocacy program consisting of advertising to promote use of the Energy Savers booklets, and the distribution of public service radio and newspaper materials.

In the transportation area, a revised version of the Fuel Economy Calculator was developed for distribution by service stations. A fact sheet on using propane as a vehicle fuel and a ride sharing booklet were developed.

An average of 800 to 1 200 requests for publications or information was handled each month by staff in this section.

(3) School programs continued to provide educational curriculum support in the field of energy conservation to the province's classrooms during 1982/83.

The School Visitation Program extended its coverage to include urban as well as rural areas with a total of 108 schools visited involving 760 teachers and 18 860 students. Presentations developed for Grades 4, 5 and 6 involved detailed pre- and post-visitation kits for teachers.

Curriculum support activities included the introduction of the Grade 6 Sleuth Kit distributed to 300 teachers by way of group training workshops.

Other activities included 24 presentations and workshops to teachers, science curriculum consultants and school board officials; a pilot program for lending an Energy/Environment Simulator to schools; participation in the joint production of the Energy Conservation Quarterly with Alberta Education and the continued distribution of curriculum support materials (93 200 pieces) at the Grade 3 and 4 levels.

In addition to the above three operational programs the branch produced the Energy Conservation Update newsletter, assisted in development of a research, development and demonstration program for energy conservation in buildings, and provided on-going informal co-ordination of energy conservation activities with other departments and agencies.

Mineral Resources Division

Report of the Assistant Deputy Minister
MICHAEL J. DAY

The Mineral Resources Division is responsible for formulating mineral resource policy, recommending legislation and exercising ministerial discretion in the administration of all aspects of the Mines and Minerals Act and regulations other than those dealing with royalty and marketing. The minerals owned by the Crown in right of Alberta which are administered include coal, natural gas, oil sands, petroleum and a wide range of evaporitic, industrial and metallic minerals, but exclude sand, gravel, clay, marl, and peat that can be stripped, and which are managed by the Public Lands Division.

Major management aspects include the disposition processes for mineral rights and the maintenance of dispositions, most of which are subject to complex tenure requirements. As a key component of these processes, the division continued to increase its involvement during the year in land-use planning and conflict resolution, with the objective of encouraging non-renewable resource exploration and development where compatible with other land uses and the environment.

In addition to minerals management, the division reviews, co-ordinates and issues approvals for mineral exploration activity by industry. A field staff of exploration inspectors is responsible for investigating complaints arising from exploration activity and for recommending remedial action.

To increase efficiency, the geoscience section of the Exploration Branch was split and transferred to the Mineral Agreements Branch and the Oil and Gas Agreements Branch, effective September 1, 1982.

The division's responsibilities are grouped into three line branches and one support branch.

On March 31, 1983 the staff count was 134 permanent positions.

MINERALS SUPPORT BRANCH

The major responsibility of the branch is to provide, directly and indirectly, a complete range of services in support of the division's goals. To service an extensive involvement on the inter- and intradepartmental level and with the mineral industry, the branch also provides mineral-related data and information to many other agencies.

Mapping, drafting and computer services are directly provided for division and government-wide use and sold to non-government agencies at a nominal fee.

Financial and general administrative services are co-ordinated in the branch to facilitate maximum attention to minerals administration, which is the specific responsibility of the line branches. Tables 1 and 2 enumerate many of the administrative transactions of the division.

OIL AND GAS AGREEMENTS BRANCH

This branch is responsible for the issuance and maintenance of the Crown's 49 278 active petroleum and natural gas agreements. Those currently being issued include exploration licences and five-year term leases of petroleum and natural gas rights, under legislation which became effective July 1, 1976. Those being administered also include the earlier form 10-year term petroleum and natural gas leases, natural gas licences and 21-year term natural gas leases.

The last petroleum and natural gas reservation in existence was cancelled in December, 1982.

All 10-year leases which reached the end of the sixth year of their terms during the fiscal year, and on which a well had not been drilled, were subject to statutory drilling requirements.

January 1, 1983 was a key date for provisions of the Mines and Minerals Act enacted in 1976, relating to the reversion to the Crown of petroleum and natural gas rights below the base of the deepest productive zone in continued Petroleum and Natural Gas (P&NG) leases with initial terms of 10 and 21 years. Lessees of more than 14 000 leases were simultaneously notified as to which deeper rights had reverted to the Crown and the records of the department were amended quickly to allow the reverted rights to be disposed of through Crown sales. A major enhancement to the division's computer system enabled the branch to produce letters and amendments on 90 per cent of the leases subject to the reversion of deeper rights. On January 13, 1983, this correspondence was delivered or mailed to the lessees of record for insertion in their copy of the lease. The large number of sale postings requesting that reverted rights be disposed in the form of P&NG licences and leases has been encouraging as have the bonuses paid for these rights.

Substantial discretionary authority is exercised in regard to lease continuation, necessitating geological, geophysical and engineering input from, and liaison with, the Exploration Branch, the Energy Resources Conservation Board (through the department's senior technical advisor geology, in Calgary) and the lessee.

During the fiscal year, 6 696 individual petroleum and natural gas leases (an increase of 47 per cent from the previous fiscal year) whose terms of five, 10 and 21 years expired were reviewed to determine whether they qualified for continuation. Of the total, 286 leases were continued by reason of established productivity. A further 389 leases or portions of leases considered to be probably productive were continued for a further year after payment of the $25 per hectare security required for the portion continued. The return or refund of the security is contingent upon a well being drilled on each such lease to determine whether or not it is underlain by a productive oil or gas pool. Of the 286 leases continued as unproven areas for a further one-year period during the preceding fiscal year, 196 were continued as productive, 80 cancelled, and six continued for a further period of one year.

The branch's responsibilities, in regard to unit agreements, are to ensure that the terms and conditions of Crown leases are not negated and, where diversity of mineral ownership exists, to further ensure that the Crown's royalty participation is equitable. During the year, nine new unit agreements became effective, two existing unitized areas were enlarged and one unit was terminated.

This branch is also responsible for processing requests from lessees for consent of the lieutenant-governor-in-council for the use outside of the boundaries of the province of natural gas produced.

The Oil and Gas Agreement Sales Section within the branch is responsible for the sale of undisposed petroleum and natural gas rights by lease or licence in such a manner as to ensure that the private sector will continue exploration work in the form of drilling. The practice of holding public offerings in Calgary was continued and 24 offerings were held during the fiscal year.

Bonus consideration from the sale of 1.11 million hectares of petroleum and natural gas leases and licences amounted to $336.1 million, down 60 per cent from the previous fiscal year.

Highlights of the year and detailed statistics of oil and gas agreement sales appear in the Alberta Resource Industry Activities and Statistics section.

MINERAL AGREEMENTS BRANCH

The Mineral Agreements Branch is administratively responsible for the granting of agreements (leases and permits) of all Crown mineral rights except those for petroleum and natural gas. The administered rights include oil sands, coal, metallic minerals ("quartz"), industrial ("quarriable"), placer, evaporitic minerals and special cases such as the caverns for underground storage of liquids or gases. The branch also issues placer mining permits to individuals wishing to operate small placer mining operations.

During the fiscal year there were no further public offerings of coal rights for sale but the branch continued to issue Crown coal leases and road allowance leases within mine permits and mine licences. The branch issued 75 coal agreements and renewed 26.

Alberta's coal industry experienced a downturn in the coal export market, prompting lessees to reassess their coal lease holdings. During the fiscal year 104 coal leases were returned to the Crown.

This trend was reflected in coal rental payments which decreased from $4.4 million to $4.3 million. Decreased activity of the coal industry is reflected by the lower activity in coal exploration where the industry expended only $13 million, down 42 per cent from the previous year.

The branch is responsible for refunding the work deposits received from previous coal rights sales. During this period $93 335 was refunded against designated exploration expenses by coal leases.

On December 31, 1981, the first-cycle work program on oil sands leases ended and the results were examined during this fiscal year. A second cycle has not yet been prescribed, in order to allow the industry to stabilize during this period when the industry was adversely affected by dramatic changes in oil consumption and the reduced cash flow. Notwithstanding this negative impact the oil sands industry continued to hold its oil sands rights basically unchanged despite the collapse of prepared oil sands mega-projects and continued in field testing of new technology at a steady pace.

The branch renewed 14 oil sands prospecting permits and 70 oil sands leases and issued two new oil sands prospecting permits and one oil sands lease.

During the period there was revitalized interest in quarriable minerals rights. Ten new leases were issued, three were renewed and five surrendered.

Due to steadily increasing gold prices there was also increased interest in acquiring placer mineral rights. The branch issued 82 new placer mining permits and three placer mining leases. The leases were issued on locations co-existing with sand and gravel operations.

The Mineral Agreements Branch, in conjunction with the Mineral Revenue Division, is responsible for the administration of the Mineral Agreements Compensation Regulations for agreements administered by the branch. During the 1982/83 fiscal year four new claims were received and were processed together with five pending claims but none was concluded and no compensation payment was paid during this period.

EXPLORATION BRANCH

The Exploration Branch provides geophysical input to mineral policy and administers the exploratory drilling and geophysical incentive programs, processes all exploration approvals and conducts field inspections of exploration activities and landowner complaints. The branch contributes actively to the land-use planning and conflict resolution processes with the objective of encouraging access for non-renewable resource exploration and development where compatible with other land uses and the environment in general.

A field staff of nine exploration inspectors is responsible for investigating and mediating complaints claimed to be attributable to exploration activity in the settled portions of the province. They are also responsible for recommending remedial action and penalties to operators of exploration equipment found to be in contravention of the Exploration Regulation. Landowner complaints have decreased eight per cent from the previous year. Of the 343 complaints received during the fiscal year, 295 were resolved at fiscal year end.

Seismic programs certified under the Geophysical Incentive Program numbered 1 895, an increase of 47 per cent over the previous fiscal year. However, an overall decrease was noted in the average size of programs certified. The credit established increased by 125 per cent, a reflection of continued industry utilization of the program. The Special Recording feature of the program remained at 10 per cent of total credits established.

Exploratory wells certified and incentive credits established under the Exploratory Drilling Incentive Program decreased from the previous year by 30 per cent and 38 per cent respectively, reflecting the continued decrease in drilling activity attributed to worldwide economic conditions. Certified depth intervals decreased by 47 per cent.

There are 409 Exploration Licences and 114 Exploration Permits listed as currently active during the 1982/83 fiscal year, an increase of 46 licences and 11 permits over 1981/82.

In order to provide immediate assistance to the Alberta-based petroleum drilling industry a Development Drilling Incentive Supplement was announced August 13, 1982. The incentive, in the form of a cash grant, extended the existing Exploratory Drilling Incentive System to all Crown wells drilled in Alberta from August 15, 1982 to December 31, 1982. Funding for the program was limited and applications for grants were not accepted after December 3, 1982. Grants amounting to $160.6 million were paid on 2 076 wells. The average grant per well was $77 000. Grants for an additional 20 wells were not processed at the end of the fiscal year.

Scientific and Engineering Services Division

Report of the Executive Director
R. D. McDONALD

The Scientific and Engineering Services Division provides technical advice and staff services to the deputy ministers and to the department with respect to policy and program development and implementation. In addition, the division is responsible for the administration of the Alberta/Canada Energy Resources Research Fund and the province's Reclamation Research Program. Total staff in the division was nine on March 31, 1983.

Technical advisory services provided by the division included studies related to coal resource development, coal conversion, heavy hydrocarbon liquid product upgrading, reclamation and the impact of oil and gas development on other natural resources. The division also reviewed and made recommendations on the need for or support of various technical or research projects.

The development of the province's extensive coal resources is a major economic opportunity. The realization of this opportunity will require innovative solutions to several serious constraints. Several initiatives undertaken by the division are directed toward expanded coal development. Following the technical assessment of coal slurry pipelining, the economic and financial potential of this transportation mode compared with an expanded railroad system was analysed in a joint study with the Economic Development Department. Discussions were initiated with the coal industry to define the scope for an expanded collaborative coal research and development program oriented to the needs of the next decade.

The interdepartmental Reclamation Research Technical Advisory Committee (RRTAC), chaired by a member of this division, administered the province's Reclamation Research Program. Funding of $1.5 million from the Alberta Heritage Savings Trust Fund supported 15 projects within three priority areas: plains coal mining, oil sands mining, and mountain and foothills coal mining. The first two programs, directed toward reclamation of lands disturbed by plains coal development and oil sands development, are jointly funded and managed by RRTAC and members of the coal mining, power generation and oil sands industries. An expansion of the scope of the third program related to foothills coal development to include industry participation is being discussed with the Coal Association of Canada.

The Alberta/Canada Energy Resources Research Fund, administered by staff in the division, supported 19 research programs and/or projects to a total of $13.8 million. Good progress was reported on these projects related to enhancing the development and utilization of the province's energy resources. The priorities for this program were redirected toward coal research and development and energy conservation and renewable energy research, development and demonstration. Research projects related to utilization of wind energy and improved utilization of energy buildings were initiated.

Division staff served on a number of committees including the Alberta/Canada Energy Resources Research Fund Committee, Interprovincial Advisory Committee on Energy (IPACE) research and development subcommittees, Development and Reclamation Review Committee, Keephills Power Station Citizens Steering Committee, Chamber of Commerce Coal Committee and technical advisory committees for the Reclamation Research Program, Coal Mining Research Centre, Petroleum Recovery Institute and the Computer Modelling Group, as well as a number of research program management committees and the board of directors of the Computer Modelling Group.

Legal Services Division

Report of the Senior Solicitor
G.B.N. HO

The Legal Services Division provides legal services to both the Renewable and Non-Renewable Resources areas of the department. Major areas of responsibility include drafting, reviewing and revising legislation, regulations, ministerial orders, agreements and other legal documents. The division also provides legal advice to the department relating to the duties, rights and liabilities of the department, and the legislation and regulations under the administration of the minister of Energy and Natural Resources and the associate minister of Public Lands and Wildlife.

As of March 31, 1983, the division consisted of four lawyers seconded from the Attorney General's Department and a permanent support staff of four.

NON-RENEWABLE RESOURCES

(1) New Regulations

(a) Petroleum Incentives Program Regulation – This regulation provides for the payment of incentives to qualified persons of a percentage of eligible costs or expenses incurred in respect of exploration or development of oil and gas in Alberta. The percentage to which any person is entitled depends upon the type of cost or expense incurred, the year the cost or expense was incurred and the Canadian ownership and control status of the applicant.

(b) Development Drilling Incentive Regulation – This regulation authorized the minister to make grants, in respect of certain wells the drilling of which commenced during the period August 15, 1982 to December 31, 1982. Grants were calculated on the basis of qualifying footage. The total depth of any well, not certified as an incentive exploratory well under the Exploratory Drilling Incentive Regulation, constituted qualifying footage. In addition, any interval of depth of an incentive exploratory well, certified under the Exploratory Drilling Incentive Regulation, constituted qualifying footage if it did not qualify as Class A or Class B footage under that regulation.

(c) Well Servicing Incentive Program Regulation – This regulation authorized the minister to make grants, in respect of eligible well servicing costs, in an amount equal to 50 per cent of eligible well servicing costs incurred. The services to which the costs related were required to have been contracted after April 15, 1982 and to have been completed before December 31, 1982.

(d) Refundable Work Deposit (Coal) Regulation – This regulation provides for the manner in which the minister is required to hold refundable work deposits furnished at sales by public tender in respect of coal leases. It specifies what constitutes eligible expenditures and provides a procedure for refunding any refundable work deposit against eligible expenditure incurred in respect of the location of the lease.

(2) Amendments to Regulations

Various amendments were made to the Petroleum Royalty Regulations, including the following:

(a) The minister was authorized to certify as New Oil Reference Price (NORP) oil entities certain production spacing units having wells drilled for the recovery of heavy oil.

(b) The lieutenant-governor-in-council was authorized to establish an old oil par price and a new oil par price. The new oil par price applies to crude oil that qualifies as new oil under the regulations.

(c) The minister was authorized to certify as NORP oil entities certain drilling spacing units from which crude oil had not been produced for three years, where production had resumed on or after January 1, 1981 from a reactivated or replacement well.

The amendments to the Natural Gas Royalty Regulations included the following:

(a) The schedule providing for the calculation of royalty in respect of natural gas and residue gas was expressly made applicable to ethane.

(b) The schedule providing for the calculation of royalty in respect of pentanes plus was amended to provide different rates of royalty for NORP pentanes plus, new pentanes plus and pentanes plus that are neither NORP pentanes plus nor new pentanes plus.

The Security Notice Registration Regulation (now the Crown Land Registration Regulation) was amended to provide for the assignment of registration numbers to documents and to provide that the registration of any document is effective when the registration number is assigned.

RENEWABLE RESOURCES

(1) Amendments to Legislation

(a) The Wildlife Act was amended to provide, among other things, for the issuance of permits by the associate minister of Public Lands and Wildlife to allow persons to keep wildlife for scientific purposes.

(b) The amendments to the Public Lands Act included the following:

- An amendment enabling any minister of the Crown or Crown corporation to transfer the administration of public land under his or its administration to any other minister of the Crown or Crown corporation without the need to obtain an order-in-council.

- An amendment enabling the associate minister of Public Lands and Wildlife to require a person who holds a disposition or an authorization and who contravenes a term of the disposition or authorization to pay to the minister a penalty in an amount not to exceed $5 000.
- An amendment increasing the maximum fine for a person guilty of an offence under the act or the regulations, for which no penalty is provided, from $1 000 to $5 000.

(2) New Regulations

(a) The Code of Ethics Regulation, the Discipline Regulation, the Examination and Training Regulation and the Professional Practice Regulation were passed to regulate land surveyors.

(b) The Fire Protection Wage and Rental Regulation was passed to increase the remuneration paid to persons for services provided and for vehicles and equipment used in firefighting and fire protection operations.

(3) Amendments to Regulations

(a) The Big Game Farm Amendment Regulation was passed. One of the changes was an amendment to expressly authorize the associate minister of Public Lands and Wildlife to sell or otherwise dispose of wildlife to the holder of a big game farm licence.

(b) The Wildlife Damage Fund Amendment Regulation was passed. Among several changes was one significantly increasing the compensation payable out of the Wildlife Damage Fund to persons whose livestock are shot by others.

(c) The Game Hunting 1980 Amendment Regulation was passed. One major change was an amendment reducing the number of authorizations a person was eligible for from four to three.

(d) The Timber Management Amendment Regulation was passed. This amendment provided for the deferral of the payment of timber dues and holding and protection charges under certain circumstances.

Systems Planning and Development Division

Report of the Executive Director
C.E. BARNICOAT

The division provides technical expertise and capabilities in the areas of automated data and word processing systems to all divisions and all programs of the department.

The division is made up of the Computer Systems Branch and Data Administration. The Computer Systems Branch handles the evaluation and acquisition of all data and word processing systems including data telecommunications and microcomputers. Office automation was included in the responsibilities of this branch in 1982/83 in recognition of the merging technologies of data and word processing. Data Administration was added to the division in 1982/83 and comprises one individual with consultant support. The functions of this branch are to provide technical support and direction for all aspects of data storage and access involved in automated systems in the department. It will also develop and manage a common data dictionary to provide information on data availability to all authorized users.

The staff count in the division on March 31, 1983 was 24 permanent positions, plus three positions seconded from Fish and Wildlife, Finance and Administration, and Mineral Revenues.

COMPUTER SYSTEMS BRANCH

In 1982/83, highlights of the Computer Systems Branch covered five major system developments, two major system enhancements and the implementation of four turnkey systems. Turnkey systems are a combination of hardware (equipment) and software (computer programs) designed to form the solution or part of the solution to a particular problem. The systems developments included:

- Development of the first release of the Land Status Automated System (LSAS) covering the preliminary land standing capability for surface dispositions. This development will continue with the last release of LSAS occurring in mid-1985.
- Development and implementation of the Animal Incident Documentation System (AIDS) which provides a centralized data bank of information relating to incidents in the areas of problem wildlife, enforcement and special investigations.
- Design and construction of the Climate Data Management System (CDMS) which will provide for the collection and analysis of climate data for specific regions of Alberta.
- Continuation of development of a large computer system to facilitate and expedite the control and analysis involved in the disposition and harvesting of timber resources. The Timber Records Enumeration and Evaluation System (TREES) is scheduled for completion in 1984.
- Commencement of development of an integrated set of Mineral Revenues Systems. The initial activity was the development of a data model for all Mineral Revenue's systems which was completed by the end of 1982/83. The new mineral tax system will be completed in 1983/84 with gas and oil revenue systems being completed in early 1985.

Major systems enhancements included:

- The addition of encumbrance information to the Mineral Agreements Information Systems (MAIS). In 1982/83, information from this system was offered on tape to the private sector for the first time.
- Major enhancements were made to the Main Accounts Receivable System (MARS) to deal with trust accounting and to make operating efficiency improvements.

Turnkey systems implementations included:

- The implementation of the Computer Graphics Mapping System (CGMS) to facilitate the development of a new base map series for the province and thematic mapping in support of integrated resource management.
- The implementation of a message switching facility to meet the needs of the Alberta Forest Service, particularly in the area of firefighting activities. This system was active and effective in the 1982 fire season.
- The implementation of a fish culture information system for hatcheries. This system provides support for research and management of hatchery operations.

Considerable interest was shown by the department in the potential of microcomputer technology for productivity improvement. Initial standards were developed for the acquisition and operation of word processors and microcomputers and these will be enhanced in 1983/84 in conjunction with other government departments.

In 1982/83, the department completed its first long-range automated information systems plan to ensure that scarce funds and people resources are applied to departmental automation priorities. The department also began to standardize the definition and representation of data elements to allow for the ready interchange of data between the automated systems within the department and other land-related systems run by other departments and agencies.

Mineral Revenues Division

Report of the Assistant Deputy Minister
C. A. GRAFF

The Mineral Revenues Division is responsible for the calculation, collection and verification of petroleum, natural gas, coal and other royalties. The division also administers and collects freehold mineral taxes. Responsibility for the control and administration of the Well Servicing Incentive Program, which arose out of the Alberta Oil and Gas Activity Program, was assigned to the division during the fiscal period. The staff complement on March 31, 1983 was 104.

Royalty, mineral tax and crude oil export revenues for the year were $4.85 billion, an increase of $205 from 1981/82. Comparative gross revenues by energy sector are illustrated in charts eight to 14.

The division was reorganized into four areas, Revenue Operations, Audit, Program Support and the Well Servicing Incentive Program.

REVENUE OPERATIONS

Revenue Operations comprises five branches: Petroleum Royalty, Natural Gas Royalty, Freehold Mineral Tax, Coal and Other Royalties, and Financial Research and Development.

A. PETROLEUM ROYALTY BRANCH

The branch calculates, verifies, collects and reports royalties payable on crude oil production from Crown leases. It also reviews and assesses documentation submitted to determine that they meet approved criteria for royalty relief.

The branch is organized into two sections: Conventional Oil and Oil Sands Royalties. Conventional Oil Royalties is further organized into three major responsibility areas: Data Co-ordination, Verification Control and Royalty Relief Incentives.

Major program changes were related to the introduction of the Alberta Oil and Gas Activity Program, which effectively decreased royalty rates on production of conventional oil in April, 1982 and subsequent months; the introduction of the Special Old Oil Price (SOOP), July 1, 1982, applicable to sales of conventional oil production approved by the branch as new oil; and the introduction of amending legislation to recognize the additional production of crude bitumen from Suncor's plant at Fort McMurray.

Other changes during the year related to extending the New Oil Reference Price (NORP) program under the 1981 Energy Agreement to production of heavy oil, to production from experimental schemes and to production obtained from reactivating or replacing previously abandoned or suspended wells. The crude oil royalty formulas for old oil, new oil and NORP were adjusted July l, 1982 and January l, 1983 to reflect agreed price changes pursuant to the Energy Agreement. A total of nine more Enhanced Oil Recovery (EOR) schemes were approved for royalty relief under Section 4.2 of the Petroleum Royalty Regulations. In March, 1983, the branch assumed responsibility for establishing verification and reporting procedures with respect to the Crude Oil Export Charge Revenue Sharing Program.

B. NATURAL GAS ROYALTY BRANCH

The Natural Gas Royalty Branch is charged with the responsibility of calculating, collecting, verifying and reporting royalties due the Crown for natural gas, propane, butane, pentanes plus and sulphur. This is achieved through four sections: Input Control, Data Co-ordination, Gas Cost Allowance and Verification.

During the course of the year the Natural Gas Royalty Regulations were amended to reflect a revised formula for the calculation of residue gas royalty, plus the restructuring of the formula for pentanes plus arising from the introduction of the certification program for NORP and SOOP pentanes plus marketed through the Alberta Petroleum Marketing Commission.

These legislative changes necessitated the revision of reporting requirements, system functions and further enhancements to the Gas Royalty Audit System. The need to recognize the changes provided the opportunity to redesign the Gas Royalty Reporting subsystem to maximize the use of the computer for front-end verification. This redesign was completed and implemented effective with January, 1983 production.

C. FREEHOLD MINERAL TAX BRANCH

The Freehold Mineral Tax Branch is responsible for the administration of the Freehold Mineral Taxation Act, the Mineral Titles Redemption Act and the collection of taxes on Freehold Mineral rights. The branch is organized into three units: Assessment Data, Freehold Records and Collections and Correspondence. Mineral taxes are based on an assessment of the fair actual value of the remaining recoverable reserves of crude oil and raw gas on freehold producing properties within the province.

The major emphasis during the year was the development of a new act. The new act bases the tax on the value of production and has the objectives of administrative simplicity and equity among title owners. It was introduced in the 1983 spring session of the legislature.

Pursuant to the Mineral Titles Redemption Act, 13 titles remain subject to redemption, with no titles returned to former owners during the fiscal year.

D. COAL AND OTHER ROYALTIES BRANCH

The Coal and Other Royalties Branch is responsible for the calculation, collection and verification of coal and other mineral royalties. Increasing activity in these areas resulted in the initiation of a major review of existing regulations and department policies to meet the changing needs of the industry.

E. FINANCIAL RESEARCH AND DEVELOPMENT BRANCH

Financial Research and Development is a new entity staffed at the beginning of 1983. This branch researches, develops and provides management with reports such as revenue forecasts, policy analysis and recommendations and statistical analysis relating directly to Mineral Revenues.

AUDIT BRANCH

The Audit Branch is responsible for conducting field audits on producers to ensure compliance with legislative requirements in submissions for royalty payments and incentive claims.

Audit frequency is established on a cyclical basis with selection principally determined by the amount of annual Crown royalties paid. Field audits were completed in accordance with Audit Branch policy and methodology and resulted in additional royalty recoveries of $28 million. This branch has eight employees in Edmonton and 13 in Calgary.

PROGRAM SUPPORT BRANCH

Program Support co-ordinates divisional administrative support in personnel matters, special programs and the preparation of divisional budgets and management reports.

WELL SERVICING INCENTIVE PROGRAM

The objective of the Well Servicing Incentive Program is to provide immediate assistance to Alberta-based petroleum drilling, service and supply industries by offsetting the costs of drilling development wells and eligible maintenance, repair and service work on certain oil and gas wells in the province.

This program, covering the period from April 15 to December 31, 1982, was completed on target and within budget. A maximum of 25 contract and temporary staff controlled and approved more than 48 000 applications during this period.

Personnel Services Division

Report of the Director
T. M. COLLINS

The division provides services to the department in recruitment, classification, wage and salary administration, labor relations, staff development and training and occupational health and safety. These services are provided through an office in Edmonton, a personnel office in Calgary associated with the Alberta Petroleum Incentives Program, and the Forest Technology School in Hinton.

Alberta Energy and Natural Resources' employment levels remained fairly constant with 2 651 permanent positions and 300 project employees. In addition, another 2 500 (approximately) persons were employed on a casual or seasonal basis for up to six months. The department again participated in temporary job creation programs sponsored by Alberta Manpower. These were: 194 in Priority Employment Program (PEP), 175 in Summer Temporary Employment Program (STEP) and 45 in Employment Skills Program (ESP).

Economic forces had significant impact on several program areas over the last year. High levels of unemployment made it easier to attract well-qualified staff; however, large number of applicants for each competition, often in excess of 100, greatly increased the administrative workload. During the year 366 competitions were conducted, down from 537 the year before. Classification activities, however, increased to 916, up 43 per cent from last year. This was in part a result of major reorganizations in the Fish and Wildlife, and Finance and General Services divisions.

1982/83 was a time of significant program evaluation and reappraisal of staff training activities. Many programs were sponsored by the department and activity continued at the same level as the previous year.

A shift in emphasis from traditional specific training courses to a more comprehensive plan for staff development was begun. This will include activities in manpower planning, succession planning and career planning and will provide the department an opportunity to better meet its long-term manpower needs and the individual plans and aspirations of its employees.

Significant strides were made in the Occupational Health and Safety Program. A department safety policy was developed and adopted and the department safety committee received a mandate to develop policies and programs for the department. The following statistics emphasize the importance of this program, not only from an employee-welfare perspective but also because of the significant cost to the department. There were 524 work-related injuries during the year, resulting in 3 160 lost workdays and a total cost of $764 083 in compensation benefits.

The Forest Technology School in Hinton serves a dual role. The school offers the second year of the Northern Alberta Institute of Technology Forest Technology Diploma Program and also provides specialized courses to the department and other agencies. In 1982/83, 59 students were enrolled on a full-time basis in the diploma program. In addition, another 1 550 people received some form of training at the school. This included 825 attending resource management courses and the remainder attending 77 additional courses, meetings and seminars. In response to the severe fire season, 1 723 firefighters were trained. This training took place in field locations.

To accommodate the Alberta Forest Service Rappel Training Program, a major facility was constructed consisting of a partially-enclosed tower and a storage building. This tower permits trainees to practise from a height of 15 metres and prepares them to serve a very specialized initial attack role in fighting forest fires. Plans were completed to renovate the kitchen and dining facilities of the Mountain View Residence and construction will be underway in 1983.

The division's 1983/84 objectives include the development of a comprehensive management training program, expansion of the safety program and new activities to deal with the decentralization of responsibility from the Personnel Administration Office to the department.

Finance and General Services Division

Report of the Assistant Deputy Minister
E. K. BARRY

The Finance and General Services Division provides services to the department in the areas of accounting, financial planning, records management, office services and drafting. The principal objective of the division is to maintain these services in an effective, efficient and responsive manner to meet the needs of the department. The division is organized into Financial Accounting, Financial Planning and Control, and General Services. The division's permanent staff on March 31, 1983 was 251 employees.

FINANCIAL ACCOUNTING BRANCH

The department's accounting responsibilities are carried out by the Financial Accounting Branch. These include invoice processing, revenue control, asset accounting and financial reporting.

FINANCIAL PLANNING AND CONTROL BRANCH

The Financial Planning and Control Branch is responsible for the overall improvement of financial information and control procedures within the department. There are three sections within this branch, Budgetary Planning and Control, Financial Policy and Procedures, and Financial Systems Development.

Some projects undertaken in 1982/83 which resulted in visible improvements in the operation of the department were:

- Production of financial policies and procedures which have standardized many of the financial transactions taking place in the department.
- A study on the flow of documents in the accounts payable process. Recommendations contained in the resulting report led to substantial improvements.
- Generation, by computer, of management financial reports which have assisted senior management in controlling costs.
- Introduction of the internal budget control system which enables divisions to improve their expenditure control techniques.

Numerous other minor projects and systems were developed and implemented in 1982/83, resulting in increased efficiency in the department.

GENERAL SERVICES BRANCH

The branch comprises four sections, Records Management, Security and Emergency Measures, Accommodation and Support Services, and the Crown Land Registrar.

The Records Management Section is charged with the responsibility of implementing and maintaining a standardized filing system, providing records storage, retrieval and distribution, mail and messenger services and microfilming. During this past year, significant progress was made with file system standardization, surface and sub-surface file rooms were integrated for the first time, the central file room was converted to lateral filing, and the Automated File Tracking System (FROLIC) was successfully implemented.

Security and Emergency Measures is a new section within the branch. During the year it completed a security review of several facilities occupied by the department within Edmonton, improved the security of the head office complex, located in Petroleum Plaza, addressed specific internal security concerns, and updated all emergency measures procedures for department-occupied buildings in Edmonton.

Accommodation and Support Services continued to provide space planning and co-ordination , support services in furnishings, parking, drafting, telecommunications and forms management, stationery and supplies, duplicating and printing and word processing applications.

The Crown Land Registrar's Section continued to serve the department, government and public through the examination and registration of legal documents affecting mineral agreements, and the recording and status of surface and sub-surface Crown lands, and providing land registration information to the public on a fee for service basis.

Development of the Land Status Automated System (LSAS) continued during this year with all project targets being met. Release No. 1 will be fully operational July, 1983. Release No. 2, the client register, will be fully operational by November, 1983. All surface township data will be converted by December, 1983.

Internal Audit Division

Report of the Director
G. A. FORD

The Internal Audit Division has completed its first full year under its new mandate and organization. The goal is to assist all members of management in the effective discharge of their responsibilities by furnishing them with analyses, appraisals, recommendations and pertinent comments concerning the activities reviewed.

While financial activities will continue to be of considerable importance, more emphasis is being placed on reviewing programs to ascertain whether the results are consistent with established objectives. Also, major computer-based systems are being examined to determine whether controls are adequate, user needs are being met and the system is achieving its intended purposes and objectives.

During the 1982/83 fiscal year the following audits were completed: 52 field locations were reviewed, six major financial audits were undertaken, 10 special reviews were done for management, four Electronic Data Processing (EDP) systems were reviewed and one management audit was done.

Staff recruitment was most successful and well-qualified people were recruited. Unfortunately it took until the end of December, 1982 to recruit the remaining auditor with training in electronic data processing. Staff complement on March 31, 1983 was nine.

The three-year audit program has been updated in consultation with the division heads and approved by the deputy ministers. It addresses the needs of the department and provides management with the broad review of operations. Practising firms of chartered accountants were used again this year, particularly in the compliance audits of grants, to enable the staff to spend time on activities unique to the department.

Alberta Bureau of Surveying And Mapping

Report of the Executive Director
C. W. YOUNGS

The Alberta Bureau of Surveying and Mapping (ABSM) is responsible for overall co-ordination of government surveying and mapping activities, development and maintenance of standards, comprehensive coverage of the province and distribution of aerial photographs, maps and related information. The bureau serves as the primary interface with the federal and municipal governments and the private sector in this field and chairs the interdepartmental committee on surveying and mapping. The Surveys Act, Land Surveys Act and Boundary Surveys Act are administered by the bureau under the direction of the associate minister, Public Lands and Wildlife. The bureau has the responsibility for providing:

- A geographical positioning framework for the province suitable for use by government departments and the private sector in the integration of position-dependent land-related information.
- A standardized mapping system for the province suitable as the basis for display of position-dependent land-related information.

The division is structured into five branches: Survey Control, Land Surveys, Mapping, Planning and Co-ordination, and Program Support. As of March 31, 1983, the division comprised 121 permanent staff positions.

PROGRAM SUPPORT BRANCH

The Program Support branch provides technical, administrative and financial support necessary to the delivery of the bureau's programs. The activities of this branch in support of the programs of line branches are reflected in the reports of those branches.

Program Support has a Technical Services Section which provides high-quality photographic reproduction service to the bureau, department and 40 other government departments. It handled 3 850 orders involving approximately 11 000 square metres of material. This section also manages contract map printing, diazo printing and microfilming. A total of 13 000 microfilms of legal plans was sorted, stamped and filed.

Program Support's Distribution Services Section distributes maps, plans, aerial photographs and other information to the public, private sector and government departments. It does this through two Edmonton outlets and one each in Calgary and Lethbridge. The retail value of goods and services provided in this area totalled $1.5 million.

LAND SURVEY BRANCH

The Land Survey Branch is responsible for survey examination, urban land survey co-ordination, Alberta township system co-ordination and the preservation and maintenance of the land survey system.

In accordance with Section 86 of the Land Titles Act, 4 670 survey plans were examined for compliance with the Surveys Act and regulations before being submitted to the Land Titles Office for registration.

Under surveying and mapping agreements made with cities and towns, revisions and updates to co-ordinate files of property corner positions were completed on 496, 1:1 000 map sheets and 216, 1:5 000 map sheets.

The first phase of upgrading the Alberta Township System Co-ordinate file was initiated with approximately 19 per cent of the 4 700 township corners tied to Alberta Survey Control.

Five inspection surveys were conducted under Section 60 of the Surveys Act. Two surveys were performed by staff surveyors; three by surveyors in private practice. The surveys were initiated as a result of public inquiries or findings of survey examination.

Approximately 60 sections of land located in the areas of townships 104-18-5, 110-12-5, 110-17-5 and 110-18-5 were surveyed using private contractors.

Landowners in townships 72-12-6 and 40-25-4 petitioned the minister under Section 23 of the Surveys Act for a resurvey of their lands where the original survey monuments had become lost. A petition for resurvey under Section 62 of the Surveys Act was also received from owners of lands in the area of township 40-28-4.

Consulting services on land surveying matters were provided on an as-needed basis to the public, other branches and departments.

SURVEY CONTROL BRANCH

The Survey Control Branch is responsible for planning and providing a survey control network for the province, comprised of monumented and photogrammetric control points, suitable for use by government departments and the private sector in the integration of position-dependent land-related information. The branch has four sections: Framework Survey Control, Municipal Survey Control, Geodetic Computation and Photogrammetric Control.

The Framework Survey Control Section provides the basic survey network for the province. This on-going program covered approximately 100 000 square kilometres and placed 670 new ASC markers. A total of 1 057 markers were targeted for

ID photography. Co-ordinate positioning was undertaken by Geodetic Survey of Canada utilizing an airborne Inertial Surveying System.

The Municipal Survey Control Section plans and co-ordinates installation and maintenance of high-density survey control for municipalities, under a municipal-provincial cost-sharing agreement. A total of 1 249 survey control markers were installed and their positions surveyed in 61 different projects. This included 520 for new projects (City of Lloydminster, 189; Town of Lac La Biche, 93; Town of Spruce Grove, 115; Town of Stony Plain, 123) and 729 in other towns and cities.

The municipal survey control program is now completed for 54 municipalities:

11 cities – Calgary
Camrose
Edmonton
Fort McMurray
Grande Prairie
Lethbridge
Lloydminster
Medicine Hat
Red Deer
St. Albert
Wetaskiwin

42 towns – Airdrie
Black Diamond
Bonnyville
Bow Island
Brooks
Canmore
Cardston
Carstairs
Claresholm
Coaldale
Cochrane
Cold Lake
Drayton Valley
Fort Macleod
Fort Saskatchewan
Grande Cache
Grand Centre
Hanna
Hinton
Innisfail
Lac La Biche
Leduc
Magrath
Morinville
Okotoks
Olds
Peace River
Picture Butte
Pincher Creek
Ponoka
Raymond
Rocky Mountain House
St. Paul
Spruce Grove
Stettler
Stony Plain
Taber
Turner Valley
Vegreville
Vermilion
Wainwright
Whitecourt

1 rural community – County of Strathcona

Geodetic Computations provides co-ordinate computation and mathematical adjustments as well as data management and distribution to users. A total of 57 projects was undertaken in addition to major work in preparation for readjustment of the provincial system on a new North American datum. Conversion of existing survey control data to the Alberta Survey Control computer system is progressing well with 95 per cent of Edmonton, 70 per cent of Calgary and 12 towns converted. The readjustment is expected to begin in 1985/86.

The Photogrammetric Control Section provides the photogrammetric control system for the province, for use by government departments and the private sector in the derivation of geographical positions of topographical and cultural features. This section was formed in 1982. Initial efforts have been directed toward determining specific user needs, defining the attributes of the system, and developing specifications and standards for photography, ground control and aerial triangulation in co-operation with the Interdepartmental Committee on Surveying and Mapping.

MAPPING BRANCH

The Mapping Branch is responsible for providing a standardized base mapping system for the province, suitable for display of position-dependent land-related information, and for providing thematic mapping services to other government departments as required. The branch has three sections: Municipal Mapping, Provincial Mapping, and Research and Development.

The Municipal Mapping Section is responsible for the development of a 1:1 000 digital mapping data base to cover urban areas of the province. The data base is used for the production of 1:1 000 cadastral base maps and, in conjunction with contract orthophoto and contour production, to derive 1:5 000 base maps. In the Cities of Edmonton and Calgary, joint production of 1:1 000 cadastral maps continued as scheduled, with 439 preliminaries checked for quality control, 781 finals accepted and 626 revision manuscripts completed. Coverage of Calgary, according to the 1981 agreement, is complete. A total of 611 manuscripts, 669 cadastral maps at a scale of 1:1 000, and 18 cadastral maps at a scale of 1:5 000, was produced for small cities and towns. Mapping contracts were established for seven urban centres, with 32 orthophoto-line maps produced. Supplementary production included cadastral co-ordinate computation for 58 map sheets, cartography for the production of five township plans and the supply of 546 map bases to government agencies and private firms. Production statistics are summarized in table 11.

The Provincial Mapping Section is responsible for the development of provincial 1:20 000, 1:250 000 and 1:1 000 000 digital mapping data bases and for the provision of thematic cartography services. Significant effort has been devoted during the past year to the joint planning, with Resource Evaluation and Planning Division, of the 1:20 000 data base. Under the urban planimetric mapping program, eight new Calgary map sheets were published at the 1:20 000 scale. A pilot project was initiated for the 1:250 000 data base, and research and testing was conducted on automated digitizing technology. A total of 17 new Provincial Access maps were produced at the 1:250 000 scale. New editions of the Transportation Primary Highway and Secondary Road Progress Charts were published at the 1:750 000 scale. The 1983 Alberta Road Map and Highway Weight Guide were published, with restoration work completed on the latter. Major restoration work was undertaken on the 1:2 000 000 and 1:5 000 000 map series, with a number of new and revised editions published. A total of 292 multicolored and monochrome maps, 190 base maps, 547 bases and 60 miscellaneous graphs, charts and forms (table 11) were completed for government departments and agencies.

The Research and Development Section is responsible for the provision of interactive graphics, automated plotting and data management services to the map production areas, as well as for applied research related to cartography. The major activity is related to the development and implementation of digital mapping projects on the Geodigital Mapping System (GMS), an integrated hardware and software configuration used for the development and production of base maps. The scope of GMS operations was expanded to include preliminary applications work on provincial mapping programs. The third phase of the system development plan was acquired and installed. The user training program received further upgrading, 26 technologists were trained and 45 staff members attended one-day supplementary training seminars. Plotting services were upgraded to provide virtually 24-hour operation, and a total of 556 ink plots, 826 photo plots and 15 scribe plots were directed toward automated digitizing, processing of contract mapping data and development of a Land Survey Graphics Index. Significant increases in data base size required upgrading of backup procedures and development of a preliminary archiving mechanism. Liaison and consultation services were provided to a number of other government agencies, and, in particular, representation continued on several joint planning groups with the Resource Evaluation and Planning Division.

PLANNING AND CO-ORDINATION BRANCH

The Planning and Co-ordination Branch has the responsibility for long-range planning and co-ordination of the bureau's programs. It serves as liaison between the bureau and the Systems Planning Division of the department, and other government departments and the private sector, in the planning and development of Electronic Data Processing (EDP) systems for the bureau.

The branch implemented the third phase upgrade of the GMS system, which increased the number of graphics work stations from eight to 11. The Land Survey Co-ordinate Record System supports the process in which unique co-ordinates for governing monuments and points in the land survey system are computed and maintained. An enhancement project, which will fully integrate the Land Survey Branch's municipal, provincial and survey examination processes, was initiated.

The Alberta Survey Control System supports the management, processing and publishing of survey control data. 1982/83 was the first year the system operated in full production. The massive data processing requirements of this system were found to be incompatible with the data storage medium chosen for the system, and a major data conversion and software enhancement project was undertaken to convert the system and data to a more compatible storage medium.

A majority of the bureau's programs have a critical dependency on EDP systems. User demands for enhancements to their systems, precipitated by the rapid growth in surveying and mapping technology, will continue fully utilizing branch capacity.

Foreign Ownership of Land Administration

Report of the Director
RONALD F. RAITZ

The Foreign Ownership of Land Administration is responsible for the administration of the Foreign Ownership of Land Regulations and the Land Agents Licencing Act and Regulations. The administration is staffed by 10 permanent employees: the director, assistant director, an administrative officer, two review officers (located at the Land Titles Office) and five support staff.

An examination of table 12 shows that the amount of controlled land acquired by foreigners decreased from 0.5 per cent of total rural sales to 0.3 per cent. The actual decrease was 2 325 hectares.

The Executive Council passed one order-in-council in the 1982/83 fiscal year providing an exemption for 16 hectares. Of the remainder of the controlled land acquired by foreigners, 1 077 hectares were under estate settlements, 62 hectares included parcels under eight hectares, 125 hectares were acquired under orders for foreclosure, 627 hectares were for industrial and resource development and 418 hectares were the subject of agreements entered into prior to April 26, 1977.

Acquisitions by permanent residents (landed immigrants) decreased this year by 10 050 hectares from 24 267 hectares to 14 217 hectares. The Foreign Ownership of Land Review officers in Edmonton and Calgary rejected 2 308 incorrect documents, made 81 investigations and dealt with 2 347 telephone and counter inquiries.

This year the only legislative change concerning the division was the proclamation of the Land Agents Licencing Regulation assented to April 21, 1982. This regulation provides for a new category of licence (an interim land agent's licence), articling and examination requirements and standards of conduct for land agents. The Land Agent Advisory Committee (established under the Land Agents Licencing Act in 1980 and made up of land agents and landowners) has prepared, with the assistance of this division and ENR Public Affairs, a *Reference Manual for Alberta Land Agents.* It was anticipated that the reference manual would be available for distribution by the end of April, 1983 and that the land agent examinations would begin in June, 1983. Interim land agent examinations have been administered since May, 1982.

Table 19 shows the number of land agent licences issued over the past five years. On March 31, 1982, there were 2 831 licensed land agents in Alberta. On March 31, 1983, there were 1 412 licensed land agents in Alberta and 46 individuals holding interim land agent licences.

Alberta Forest Service

Report of the Assistant Deputy Minister
J. A. BRENNAN

The Alberta Forest Service (AFS) is responsible for the management of Alberta's forest lands to ensure perpetual benefits while maintaining a forest environment of high quality. The forested lands of the province are divided into 10 forests, each with its own headquarters. The AFS is divided into six branches: Forest Protection, Forest Land Use, Timber Management, Reforestation and Reclamation, Forest Research, and Program Support. Management, Reforestation and Reclamation, Forest Research, and Program Support.

The number of permanent staff positions for the division was 777 on March 31, 1983.

FOREST PROTECTION BRANCH

In recognition of the severe drought situation that had been building throughout the northern half of the province since 1979, a number of new initiatives for the 1983 fire season were undertaken, including: (1) presuppression preparedness (increased resources and readiness), (2) a lightning detection system, (3) automatic weather stations (to aid in fire weather hazard ratings), (4) increased air attack, (5) two additional helitack crews (6) the upgrading of two existing helitack crews to rappel capability and (7) additional university manpower crews.

Although the spring season was relatively dry, the 1982 fire season began slowly with only 241 fire starts burning 3 000 hectares until the end of May. The dry condition persisted and when a severe and intense dry lightning storm occurred in mid-June, multiple fires were ignited. Within four days 205 lightning fire starts were reported in the north-central part of the province. Many of these fires were in heavily-timbered areas. Despite the AFS effort to contain these fires to an acceptable size, a number became large. Nevertheless, more than 95 per cent of the 1 285 fires during the year remained smaller than 200 hectares with the remaining five per cent burning 680 000 hectares. More than half this area was in productive or potentially-productive forest. The loss of coniferous saw timber is estimated at 6.1 million cubic metres. The total fire suppression costs were approximately $75 million ($55.9 million direct fire costs and $19.1 million indirect – i.e., manning-up costs, etc). A forest fire summary for each district is provided in table 22.

The AFS continued the mountain pine beetle control program in the Crowsnest area. During 1982, the number of infested trees requiring treatment declined by 75 per cent compared with 1981.

FOREST LAND USE BRANCH

The Forest Land Use Branch is responsible for the integration of resource management in forest lands under the jurisdiction of the AFS.

The branch assesses and controls industrial activities to minimize conflicts and protect the forest environment. Forest lands are extensively used by the public for outdoor recreation, and the branch plans and develops campgrounds, group camps, day-use areas and various types of recreation trails. Other important functions include management of forest lands for protection and enhancement of watershed values and for use of the forage resources by domestic stock. The AFS is a major client and participant in the department's integrated resource planning program, and the branch guides and co-ordinates this activity within the AFS.

Geophysical exploration showed an increase in the number of programs approved, from 656 in 1981/82 to 746 in 1982/83. In addition, 33 other mineral exploration programs were approved. Applications for land dispositions in the Green Area increased by five per cent, from 3 980 to 4 182. In addition, 2 312 timber damage assessments were processed. Under Part Three of the Land Surface Conservation and Reclamation Act, 1 779 reclamation certificates were issued.

Applications for major linear developments such as regulated pipeline and transmission lines declined in 1982/83. Generally, the reduced activity (as opposed to previous years of intense development) was distributed quite evenly throughout the Green Area. The review of major highway proposals became more intensive as more planning was required to improve the quality of major roads and to minimize their environmental impacts. Coal development in the Hinton-Edson area has slowed with only two mines under construction and two proposed.

Timber and forest protection revenues resulting from industrial operations amounted to $3 161 000, excluding revenue collected by the Public Lands Division on land dispositions.

There were 167 pollution incidents which required response by the AFS. A total volume of 15 280 cubic metres of liquid was involved. A train derailment of sulphur required clean-up supervision.

Two well blowouts occurred. In one case large volumes of hydrogen sulfide, sulfur dioxide and light oil were released over a 68-day period. Coordination for emergency response and clean-up was supplied for the department.

Four one-day training courses in dangerous goods transportation were provided to field staff of the department.

Herbarium seminars were held in eight forest districts with 983 mounted plant specimens provided for field use. Investigations were completed and reports produced on the use of caragana for tailings sand reclamation and for control of aquatic weeds in a North Wabasca Lake recreation area.

The number of Animal Unit Months (AUM) of grazing utilized in the Rocky Mountains Forest Reserve was 74 378 AUM from a total of 80 797 AUM. A total of 25 093 head of mature stock was grazing on 91 allotments. The revenue collected was $156 954.53 from 269 permits.

A total of 517 dispositions, which includes grazing leases, permits, head tax permits and forest grazing licences, was issued on 133 199 hectares of land in the Green Area outside the Rocky Mountains Forest Reserve.

In the southern part of the province, May and June were very wet. August and September were drier and warmer. The result was excellent for the growth of all forage species. In the northern areas, the spring months were very dry. However, in most areas there was sufficient rain from June to September to maintain the range in generally good condition.

Normal watershed activities such as the collection, compilation and publication of the precipitation data from the 135 Sacramento gauges in the network were completed. Watershed management input for integrated management plans was completed for two areas.

The treatment phase for the Tri-Creeks Research Program is expected to be completed in the winter of 1984/85. This would put the completion of the study at about 1990.

The placement of a new watershed management position in the Rocky/Clearwater Forest now brings the total number of field positions to three: Bow/Crow, Grande Prairie and Rocky/Clearwater forests.

Major projects undertaken this past year were:

- The completion of the data storage and retrieval system for sediment and stream flow data. This will be incorporated into a procedure manual being developed.
- The final report on the comparative use of different artificial substrate samplers for monitoring aquatic invertebrates was completed.
- A final report on the evaluation of artificial substrate sediment traps was completed.

The Recreation Section is guided by the report, AFS Recreation Program – Goals, Policies, Long-Range Objectives, Priorities and Budget Guidelines, which outlines the involvement of the AFS in the operation and maintenance of existing recreation developments (table 23) and the construction of additional facilities. In addition, this policy document outlines the role of the Forest Recreation Section in the planning and management of recreation programs and facilities and also, more broadly, in land management.

A Long-Range Forest Recreation Planning Project is underway to determine future program priorities, facility targets and development schedules. The direction over the next five years of the AFS Recreation Program will be to emphasize the upgrading and expansion of existing facilities, trail developments, water access points, remote primitive campgrounds, group campgrounds and visitor information.

Another major planning venture in 1983 was the Kakwa Master Planning Project. This project involved public participation including meetings with numerous interest groups. The purpose of this plan is to resolve land use conflicts in the Kakwa area by identifying the demands and capability of the area and by establishing goals and objectives for the future management and use of the area.

In 1982/83, $1.6 million was budgeted for upgrading and construction projects in approximately 30 recreation areas. More than 150 recreation facilities were operating during 1982/83 at an approximate cost of $2 million.

The integrated resource management planning program was given increasing priority within the AFS in 1982/83. A Framework for Co-ordinating Forest Service Input for the Integrated Management Planning Process was developed and approved. A report outlining the Resource Planning Section: Organization, Rules, Responsibilities, and Procedures was undertaken and completed. The section also presented A Proposal for Forest Products Industry Participation in Developing AFS Input to the Planning Program. Comprehensive inputs for various phases in the planning process were developed for on-going plans. In four of the integrated management plans the AFS input was completed to the plan design stage. Data was collected for the Coal Branch area and a resource background paper is being prepared. The planning section represented the division on the Agricultural Land Base Task Force which prepared a Project Proposal to Determine the Potential for Expansion/Intensification of the Agricultural Land Base in Alberta. A pilot project was initiated to utilize the biogeoclimatic classification system to assess forest site productivity and to compare the productivity of forested and non-forested sites.

TIMBER MANAGEMENT

The Timber Management Branch manages Alberta's timber resources to obtain an increased and perpetually-continuing timber harvest, while maintaining a forest environment of high quality. The branch allocates the timber resources of Alberta through timber supply analysis and harvest scheduling. It regulates, controls and inspects timber harvesting and production and scaling operations. It sells timber quotas, issues licences and permits and collects timber dues, reforestation levies and holding and protection charges. It also compiles the provincial forest inventory.

In July, 1981, proposals were invited from individuals and companies to develop and utilize coniferous and deciduous timber from the Brazeau Timber Development Area located in west-central Alberta. The deadline for proposal submission was June 1, 1982. A total of 12 proposals and requests for expansion was received. Two of the proposals include plans to construct sawmill/pulp and paper mill complexes, whereas the remaining proposals were primarily for sawmill development and/or expansion to existing sawmills.

Public hearings were held in Drayton Valley and Rocky Mountain House, August 24 to 27, 1982, at which time the proponents outlined their proposals and responded to questions from the public and government delegates present. Following the hearings, the proposals were taken under review within government, and were still being reviewed at the end of the fiscal year.

Despite the depressed market conditions for forest products which continued into 1982/83, Alberta's forest industries continued to operate at about 75 per cent of normal production with only a few exceptions. This was due, in part, to a number of incentive programs:

- The Timber Salvage Incentive Program. Introduced initially in October, 1981, this program was extended into 1982/83 and provided a payment to timber operators for producing lumber from fire-killed and insect-attacked timber. The extension of the program was partly in response to very heavy fire incidence during the summer of 1982 which prompted the need to encourage utilization of the burned timber as quickly as possible. Approximately 1.3 million cubic metres of fire-killed and insect-damaged timber was salvaged during 1982/83 and incentive payments of $8.7 million paid to industry.
- Deferred timber royalties reforestation levies and holding and protection charges. Effective April 1, 1982, payments of royalties by industry for products produced or sold between April 1, 1982 and March 31, 1983 were deferred. Also, holding and protection charges from May 1, 1982 to April 30, 1983 were deferred for payment for quota and Commercial Timber Permit operators. Repayment of deferred charges was to commence April 1, 1983 and May 1, 1983, respectively, with royalty being repaid over the 12-month period following commencement of payments. Total deferred payments during 1982/83 were $4 819 680.50.
- Forest Employment Bridging Program. A joint federal-provincial government employment creation program was introduced in September, 1982 to provide employment opportunities for laid-off forest workers, in anticipation of depressed market conditions in 1982/83. Approximately 2 133 days of employment were provided at a cost to Alberta of $107 168.

In October, 1982, a group of United States forest industries filed a petition with the U.S. Commerce Department alleging that Canadian and provincial governments were subsidizing the export of softwood lumber. Alberta, as the fourth largest exporter of forest products, was concerned about the implementation of a countervailing duty on lumber shipments into the U.S. in the event the allegation was upheld. The Timber Management Branch provided information to provincial and national forest industry groups on forest product legislation and policy in Alberta. The preliminary determination, rendered in March, 1983, was that no significant subsidy existed. (In May, 1983 a final decision was made which confirmed the preliminary determination.)

In timber management planning, the branch continued to develop methods and procedures for implementing timber quota renewals in 1986, when the majority of the 20-year timber rights will be up for renewal. One of the major changes to renewed quotas planned for 1986 will be an increased level of utilization in the forest, resulting from reduced stump diameter harvesting. Minimum stump diameter utilization standards will be established at 15 centimetres compared with the current common level of 25 centimetres.

REFORESTATION AND RECLAMATION BRANCH

The Reforestation and Reclamation Branch is responsible for reforestation and reclamation programs, the provincial forest genetics and tree improvement program and the Pine Ridge Forest Nursery.

Reforestation surveys were completed on 20 626 hectares of cutover land, including 9 592 hectares of post-harvest surveys and

11 034 hectares of regeneration surveys. Of the area surveyed for regeneration, 76 per cent was found satisfactorily stocked according to existing provincial standards (table 24).

Silviculture treatments completed by the AFS included mechanical scarification of 8 131 hectares, seeding of 3 212 hectares, planting of 5 398 hectares (7 202 774 seedlings), and thinning of 543 hectares. Cone collection totalled 17 500 hectolitres for pine and 5 219 hectolitres for spruce (table 26). Included in these totals are the accomplishments of the Priority Employment Program (PEP), under which 8 733 hectolitres of pine cones were collected and 135 hectares of overdense forests were thinned during the winter months. PEP also funded the clean-up of stands damaged by mountain pine beetle in the Bow/Crow Forest.

The Maintaining Our Forest Afforestation Program (MOF), funded through the Alberta Heritage Savings Trust Fund, included 161 130 hectares of stocking surveys, land clearing of 10 091 hectares, 9 955 hectares of scarification, 6 606 hectares (9 573 997 trees) planted, 1 009 hectolitres of cones collected, 30 hectares aerially seeded, and 702 hectares thinned (table 28).

The Reclamation Section is responsible for the administration of operational reclamation programs in the Green Area. It also conducts very limited applied investigations in reclamation. During the year 32 operational reclamation projects were undertaken to clean up disturbances on creek crossings, gravel pits, millsites, wellsites, recreational campsites and approximately 70 kilometres of abandoned roads, trails and lines.

The clean-up of the shoreline and floating wood and debris in the Brazeau Reservoir continued. Work included cutting the remaining standing snags, piling and burning. The major part of the project is considered complete; there may, however, be periodic future work required as new wood and debris accumulate.

The section continued work on the joint government/industry-sponsored reclamation research program on woody species for reclamation. Field trials on reclamation established in earlier years on oil sands mine wastes and on abandoned coal mines in the Eastern Slopes of the Rockies were monitored, maintained and progress reports prepared on some of the studies. The first complete data collection was carried out on experiments begun in 1980 to study the effects of thinning and fertilization on the growth of a young lodgepole pine stand near Edson.

As part of the co-operative genetics and tree improvement program, an agreement was signed with the Forest Management Agreement (FMA) holders regarding development of seed orchards in Alberta. A land parcel near Grande Prairie was purchased for a seed orchard complex which will be developed and operated by a co-operative formed by B.C. Forest Products Ltd., Canadian Forest Products Ltd. and Procter and Gamble Cellulose, Ltd. Four additional lodgepole pine progeny test research plantations were established jointly with Blue Ridge Lumber (1981) Ltd., and seven white spruce and eight lodgepole pine superior trees were selected in northwestern Alberta for an improvement program.

Six research plantations were established at various locations throughout the province, and the first seed orchard planting to produce genetically-improved white spruce seed for reforestation was established at Pine Ridge Forest Nursery. Site development and fencing of two experimental areas was completed. Stock from an additional 18 species was raised for planting in the research arboretum established at Pine Ridge in 1982, and expansion of clone banks continued with the addition of 25 white spruce and 22 lodgepole pine clones. Forty-six new seedlots were added to the genetics seed bank and 756 seedlots were germination tested. Experimental planting stock production consisted of 37 302 seedlings and 849 grafts. Several research studies on flowering and seed production, vegetative propagation, pollen management technology and plant propagation were continued or completed.

Funding through the Alberta Heritage Savings and Trust Fund allowed for an expanded program in genetics and tree improvement during the year.

Pine Ridge Forest Nursery continued to expand seedling production. The completion of additional shade frames last year enabled double cropping in the greenhouses. An additional Grayco seedling harvester and tractor were purchased to facilitate lifting of the expanded bareroot production. The fleet of refrigerated vans for delivering seedlings was also expanded.

The Research and Investigations Program continued to provide technical assistance in developing production techniques and monitoring growth rates of bareroot and container seedlings.

The nursery processed 12 241 hectolitres of pine cones and 5 900 hectolitres of spruce cones. The total seed inventory was increased by 6 377 kilograms to 43 085 kilograms (table 29).

Containerized seedling production continued to increase with 17 715 744 seedlings grown in 1982. There were 13 700 626 container seedlings shipped to the forests for planting (table 30).

The bareroot seedling inventory now stands at

43 441 969. A total of 7 337 712 bareroot seedlings was shipped for planting in 1982 (table 30).

FOREST RESEARCH BRANCH

The objectives of the Forest Research Branch are to initiate mission-oriented research by managing and supervising contract research and by conducting its own program in the field of improved forest land management; to transfer research results into practice; to provide an up-to-date review of relevant research carried out by other agencies; to assist in the development of government and industrial forest managers; and to co-ordinate research conducted in Alberta by other agencies such as the Canadian Forestry Service, industry and universities.

In-house research programs were initiated in extending planting seasons, determining proper lifting dates and storage of seedlings, site classification and watershed management. A total of 13 studies was contracted with various research agencies and 10 studies were funded from the Forest Development Research Trust Fund.

PROGRAM SUPPORT BRANCH

Program Support comprises seven sections which provide support services: Administration, Budget and Purchasing, Building Construction, Equipment Development, Vehicle Maintenance, Extension Services, and Forestry Youth and Social Development. The last includes Junior Forest Wardens and Junior Forest Rangers as well as special projects.

Extension Services undertook internal and external communication initiatives providing: access to resources, clarification of roles and procedures, preparation of print and audio-visual materials, support services for field and head office staff and resource personnel for displays and educational and youth groups in the Edmonton area.

A procedures manual, distributed to branches and forests, details existing slide/tapes, films, displays and publications. It provides guidelines for the preparation of annual and technical reports and for organizing official openings. As a follow-up to its release, a roles statement clarifying Public Affairs and Extension Services' responsibilities was developed. An advertising policy statement was instituted clarifying procedures and underlining the need for visual identification.

More than 150 projects were initiated by Extension Services. These included a feature-length film on the Pine Ridge Forest Nursery, a major forestry display and parade float, five slide/tape programs and numerous reports and technical and general publications.

To heighten the division's public profile in the Edmonton area, Extension Services participated in major exhibitions, shopping mall displays and trade shows. The section provided speakers for youth groups including 4-H clubs, scouting groups and private, public and separate schools. In areas outside Edmonton, resource materials were provided to forests for their own regional public information programs. Additional support and co-ordination were provided for numerous official openings which took place in the field this year.

The Construction and Maintenance Section co-ordinated the planning of projects with Public Works and Supply and Services throughout the province. Initial planning to the program stage was completed for a new forest headquarters facility at Edson. This will be a major facility developed on land adjoining the Edson Airport.

Land was purchased for a forest headquarters at Lac La Biche and a new district headquarters at Valleyview situated in the Grande Prairie Forest. The Grande Prairie headquarters and the district office in Fort McMurray were completed and occupied.

A major safety hazard was identified in the handling and storage of Jet B/Turbo Fuel at a number of forest sites in the province because of the absence of regulating codes. This situation was researched, new designs for facilities and handling procedures were developed and the facilities built.

The section co-ordinated land acquisitions through the Department of Environment for the Reforestation and Reclamation Branch. Two parcels of land were secured for the Genetics Section for the development of seed orchards at Grande Prairie and Whitecourt.

An office building was constructed at Cold Creek Ranger Station in Whitecourt Forest and a major garage/cache addition was completed at the Elbow Ranger Station in Bow/Crow Forest.

A large number of projects throughout the province was completed for the Protection Branch. Tower and lookout projects comprised Gift Lake tower cabin, Cambrian cabin/tower and engine room; Pigeon lookout, Ram lookout and Cline lookout. Staging camps construction took place at Livingstone (new), Grovedale and Beaver Lake (replacements). Initial attack bases were updated with facilities built at Steen River and Manning. An air tanker base is in the development stage at Loon River and was to be operational in the spring of 1983.

A Rappeltak Training Centre was planned, designed and constructed at the Forestry Training

School by the Construction and Maintenance Section. The project is complete apart from some seasonal deficiencies and was to be ready for training in April, 1983. This project took three months from conception to completion and matched the estimated cost of $300 000.

Through the Edmonton shops, Construction and Maintenance provided millwork, cabinets and specialty items for all branches of the AFS, and the Sign Shop produced a large number of signs for Kananaskis Country and all forests, including many large sandblasted signs. The Sign Shop also made a major contribution to the development of the 1982 Forest Service Parade Float.

The function of the Equipment Development Section (EDS) is to design, develop and construct specialized forestry-related equipment and tools.

The Program Support Branch, Reforestation/Reclamation, Forest Land Use, Forest Protection, Timber Management, Forest Research, 10 forests and Pine Ridge Forest Nursery were served by designing, developing and constructing specialized machines/equipment for particular applications to their operation.

Several improvements were made on pieces of equipment at the Pine Ridge Forest Nursery. Twelve reefer vans were modified with the installation of extended cooling duct systems to preserve bareroot trees during transport. A front-mounted lateral root pruner was designed and constructed, complete with independent disc suspension, soil retainers and bed shaper to speed operation in the field. A newly-developed herbicide applicator, suspended behind a tractor, improved the time, decreased the amount of herbicide required in the application and eliminated most of the drifting problem in spraying.

The Protection Branch was provided with a newly-designed and advanced filtering system for its new portable fuel pumpers for helicopters. Air Tanker Base Manning was completed by installing water and fire retardant tanks, piping and pumps to load retardant aboard bombers during fires. Several new aerial lifting devices were designed to airlift equipment by helicopter to high elevations or inaccessible locations. Forest Land Use was provided newly-designed bearproof garbage bins and fish cleaning stands. Timber Management was able to photograph cutblocks from the air by using the EDS-designed aerial camera mount complete with drift, tilt and tip adjustments.

The Alberta Junior Forest Warden Program increased to 86 clubs with a total of 1 700 members. The continued promotion and recruitment of new clubs and leaders is expected to demonstrate an increase in membership by 1984 to more than 2 000 wardens. A recruitment program is underway to attract wardens in the 16-to-18-year-old group.

More than 50 leadership workshops, ranging from outdoor learning and forestry education to planning and consultation, were conducted throughout the province.

The Junior Forest Warden Long Lake Camp is now operating on a year-round basis as a Junior Forest Warden leadership centre.

The Junior Forest Ranger Program, for young people aged 16 to 18, made it possible for 72 young Albertans to live, learn and work in the forest area of Alberta during July and August. This program, originally funded by Advanced Education and Manpower, has now been transferred to the Alberta Forest Service.

Minimum security camps were maintained jointly with the Attorney General's Department. Inmates worked a total of 32 166 person/days on forestry projects including recreation projects, mountain pine beetle control and fire suppression. Inmates also cut approximately 18 000 cubic metres (5 000 cords) of fuelwood for campsites.

The Forestry Career Incentive Program is educational work experience that provides an opportunity for Albertans to receive forestry training and academic upgrading in preparation to enter a forestry school program. The opportunity is given to individuals who would not normally have access to this type of career. This spring, the first trainee from the career incentive program completed the first year at the Northern Alberta Institute of Technology (NAIT) in Edmonton and will enter the Forest Technology School this fall. The second candidate will enter NAIT this fall. The program is still in its embryonic stage and is being closely monitored. There are five trainess in the program.

The Mechanical Section provided maintenance for 614 permanent vehicles, 264 seasonally-assigned vehicles, heavy construction tractors and equipment, and numerous gasoline and diesel-powered units at 12 repair facilities throughout the province. The Generator Engine Section maintains and operates 360 generator power plants for electric power at communication radio relay sites, lookout towers, construction camps and standby power. The AFS transport trucks transported approximately 21 million seedlings to planting sites throughout the province.

Resource Evaluation and Planning Division

Report of the Assistant Deputy Minister
L. J. COOKE

The Resource Evaluation and Planning Division provides a complete range of aerial photography, resource mapping, resource inventory and appraisal, integrated resource policy and planning and intra- and interdepartmental co-ordination services to the department. The functions and responsibilities of the division are carried out by the Resource Evaluation, Resource Planning and Program Support Branches and the regional co-ordination staff. On March 31, 1981, the division had 148 permanent positions.

RESOURCE EVALUATION BRANCH

The Resource Evaluation Branch includes three major areas: Resource Mapping, Resource Inventory and Appraisal and the Natural Resource Information System. The branch provides comprehensive photogrammetric and cartographic services, map and air photo reproduction, the inventory and appraisal of natural resources and the development of an overall natural resource information system for public land and resources.

Demands for Resource Mapping services continued to increase in all areas during 1982/83 with the Alberta Forest Inventory Mapping Program paramount. The highlight was the introduction of computer graphics technology to better meet clients' future needs. A five-year plan to update the 1:50 000 Provincial Resource Base Maps utilizing recently acquired aerial photography commenced in 1982/83 (map group 4). Considerable effort was also directed toward updating the 1:1 000 000 and 1:1 500 000 Provincial Base Maps which were subsequently printed along with the various administrative overprints. A large number of high profile special purpose maps such as the sixth edition of Kananaskis Country and the Fish and Wildlife regulatory brochures were also prepared and lithographed.

Inventory Mapping enjoyed its most productive year to date with a record 95 213 square kilometres mapped at a scale of 1:15 000 for the Phase 3 Forest Inventory Program (map 6). This was accomplished by further involving private sector mapping firms. In addition to map preparation, 134 695 square kilometres of the completed inventory was area measured and almost 21 000 square kilometres loaded into the computer.

Photogrammetric Services maintained its high level of productivity in all areas (table 20 and map group 2) in spite of having to cope with the problem of another record forest fire campaign and the start of a new digital mapping program. Production objectives were met for all major projects including aerial photography and base map control for the Alberta Forest Inventory Mapping Program. New computer-assisted mapping techniques were implemented in a prototype mode and plans were established for further development of digital map production.

The demand for the services of the continuous tone operations of the Map and Airphoto Reproduction Centre remained approximately the same as the previous year whereas the production in Graphic Reproduction increased by 33 per cent. With the acquisition of a new rectifier, users are provided with prints suitable for assembly into controlled mosaics. Modifications to an existing enlarger extended the enlargement potential from six times to 17. The accompanying chart (table 21) illustrates the increase in service volume provided by the centre during 1982/83.

Resource Inventory and Appraisal provides resource inventory data and appraisals of these resources for departmental and other provincial planning and management agencies. The inventories and appraisals are carried out through three functional sections: Land Classification, Resource Inventory and Resource Appraisal. The Land Classification Section generates physical land, soils and terrain sensitivity inventories. The Resource Inventory Section provides several types of vegetative inventories, and the Resource Appraisal Section provides ecological land classification and climate inventory information. Additionally, the Alberta Research Council is contracted to undertake certain resource inventory and evaluation activities on behalf of the department.

The Land Classification Section completed physical land and soils classification studies for the following areas as part of its on-going work for resource planning and management agencies: the Deep Basin (83L – South Half), Ram-Clearwater, Chungo-Cline-Nordegg, Clearwater Grazing Reserve and Special Lakeland areas. Classification is in progress for the Swan Hills, Coal Branch and Red Deer-James study areas. In addition, many smaller projects were completed for clients. The second edition of the terrain sensitivity ratings was completed for 14 townships in the Grande Prairie Forest (83L – South Half) with work in progress in Coal Branch (map group 5).

The Resource Inventory Section gathers a wide variety of biological inventory data. The Forest Inventory Unit completed 39 606 square kilometres of Alberta Forest Inventory interpretation at a scale of 1:15 000, thus concluding the interpretation component of the Alberta Forest Inventory program on schedule (map 6). The Forest Site Classification Unit, in conjunction with the Forest Research Branch of the Alberta Forest Service, continued the

Biogeoclimatic Forest Site Classification Program. Field work was concentrated in the Sundre area with data analysis contributing to the report *An Ecosystem Classification of the Boreal Cordilleran Ecozone: Sundre Area.* The Forage Inventory Unit undertook fieldwork in the Grande Prairie (83L), Coal Branch and Lakeland areas. Field work, data analysis, mapping and report writing resulted in the completion of vegetation information for the Lakeland and Grande Prairie (83L – South) study areas (map group 5).

The Resource Appraisal Section continued its program of providing Ecological Land Surveys for the integrated resource planning program and for other resource development planning areas. The publication *Ecoregions of Alberta* has undergone third printing due to high demand. Ecological Land Classification reports have concentrated on the following areas (map group 7): Wapiti, Chungo-Cline-Nordegg, Ram-Clearwater, Kananaskis Country and Sturgeon-Puskwaskau. In addition, the following special studies have been completed: (1) an evaluation of downhill ski development potential of an area near Abraham Lake, (2) a literature review and evaluation of the Lubicon Lake area, and (3) an evaluation of agricultural ratings for an area near Jean D'Or Prairie. The Climate Inventory program operated two year-round agroclimatic networks in the Green/Yellow area fringe of the Peace River Region: High Level-Fort Vermilion and the Sturgeon-Lesser Slave Lake areas (map group 5). Another network was operated in co-operation with the Fish and Wildlife division to monitor the winter climate of a number of caribou habitat sites in the Muskeg River area north of Hinton. Winter climate was also monitored for a downhill ski area evaluation. A computer-based climate data management system is nearing completion. Climate summaries and evaluations were supplied for a number of ecological and physical and land surveys. The climate program continued to co-ordinate its activities with other branches within the department, as well as with the Government of Canada and universities.

The Alberta Research Council administered two on-going contracts for the division. The Coal Evaluation Program is midway through its second phase of systematic investigation of seam geometry and continuity in each plains coal-bearing unit. The approach combines subsurface geophysical data, supplementary ARC drilling/coring and sedimentological outcrop studies. Recent work has focused on the Scollard, Lower Horseshoe Canyon and Judith (Belly) River coals, as well as the distribution of coal rank using data acquired during the preceding phase of the program. The Provincial Aggregate Inventory in 1982/83 published and distributed reports on the Edson, Mayerthorpe and Drayton Valley areas. Fifteen 1:50 000 map sheets were produced for these areas. An additional seven 1:250 000 map sheets for various parts of Alberta are in press. A supply-demand study is currently underway for east-central Alberta. Clay and other materials with potential as expanded aggregate were investigated in the Edmonton area.

The Resource Evaluation Branch continued development of the Natural Resources Information System with the implementation of the Computer Graphics Mapping System. This system is used to create a new highly accurate provincial digital map base and to convert the department's graphic land administration and resources management data. The resultant provincial geographic data base will form the foundation for the Natural Resources Information System.

Production of the *Natural Resource Information Directory* was undertaken as part of the Natural Resources Information System. The 1983 edition was, for the first time, computer generated, providing the initial step in making the natural resource information contained within the document available through computer search and retrieval facilities.

RESOURCE PLANNING BRANCH

The Resource Planning Branch co-ordinates the preparation of integrated resource plans in order to make the best use of public lands and resources. Within the branch, the Regional Planning Section provides integrated resource plans at a regional level that reflect resource policies and provide a framework for the development of more detailed plans. The Management Planning Section prepares the more detailed integrated resource plans for specific areas in Alberta. These plans provide guidelines for resource management and indicate which uses should take place and specifically where and under what conditions they should occur. The Current Planning Section provides a short-term integrated planning service to resource managers using existing information. The service is restricted to problem situations which, because of high priority or degree of conflict, cannot await the longer term required for the preparation of a standard integrated resource plan.

The Resource Planning Branch also provides review and referral services by co-ordinating departmental comments on a wide range of matters. Included are all referrals to the department from other departments, coal development proposals and major development proposals in the Eastern Slopes, applications for rezoning under the

Eastern Slopes Policy and applications for reclassification under the Alberta Coal Development Policy. In 1982/83, the Current Planning Section coordinated 55 such referrals with eight of these relating to the Eastern Slopes and Coal Development policies. In addition, this section was responsible for the review of eight Environmental Impact Assessments and 23 planning referral documents from the Alberta Planning Board.

During 1982/83, the branch co-ordinated 16 major integrated resource planning projects, including two grazing reserves (completed), two regional plans, 11 sub-regional plans and one local plan. The administrative review of *A Policy For Resource Management of the Eastern Slopes* continued under the co-ordination of the branch.

The branch was also involved in the study of several other policy issues, including agricultural expansion on public lands, helicopter use in the Eastern Slopes and a surface minerals policy.

The Public Involvement Program Section continued to increase the involvement of public groups and individuals in the planning process. Initiatives included the introduction of joint public consultant/ planning team meetings, public open houses and information exchange sessions, a monthly newsletter, development of public information and orientation materials, and preparation of community profiles for all planning areas.

As well, the Alberta Integrated Planning Advisory Committee, a public advisory committee to the associate minister, completed its second year of providing the government with recommendations on a wide variety of integrated resource matters.

The branch continued to provide service and chairmanship for the Resource Integration Committee and staff to participate on a number of committees. The understanding and commitment by agencies and public groups involved in integrated resource planning increased in 1982/83, which will aid in the completion and implementation of ongoing and future plans for the management of public lands and resources.

PROGRAM SUPPORT BRANCH

The Program Support Branch provides for operations of the office of the assistant deputy minister and is responsible for providing support services in administration, personnel management, budget and staff development co-ordination, and financial and records management for the division. In the initial stages of implementing a word processing system, equipment was purchased and personnel trained.

REGIONAL CO-ORDINATION SERVICES

In 1982/83, Regional Co-ordination Services were well established in the Peace River, Athabasca and Northeast Region, Eastern Slopes and Southern and Central regions. Through interdivisional coordination the regional resource co-ordinator is to effect integration in all phases of public land and resource management including program development and integrated resource planning. Each regional resource co-ordinator is a member of the Regional Resource Management Committee which provides communication links for the department, other agencies and the public.

PEACE RIVER REGION

The office for the Peace River Region is located in the Town of Peace River. Activities during 1982/83 included the official opening of the department's regional office, completion of the regional situation appraisal, review and recommendations to the department on land use, resource management and administrative issues of provincial and regional significance, and participation in the Northern Alberta Development Council's study of agricultural land in the Peace Region.

ATHABASCA AND NORTHEAST REGIONS

The Athabasca and Northeast Regional Office was established in St. Paul in 1982 and provides the department with regional management decision-making through the Regional Resource Management Committee.

EASTERN SLOPES REGION

The regional office for the Eastern Slopes Region is located in Rocky Mountain House. Regional Resource Co-ordination Services assists with the major integrated resource management and planning programs. The regional resource coordinators aid the Regional Resource Management Committee in directing integrated resource management and planning. Progress is being made in incorporating regional directors of other departments into these meetings to strengthen the concept of regional integrated management.

SOUTHERN AND CENTRAL REGIONS

The office of the regional resource co-ordinator for the Southern and Central Regions is located in Lethbridge. This office provided situation appraisals, resource information and integrated planning in the region. These services have proved to be of great benefit to integrated resource management in the region.

Public Lands Division

Report of the Assistant Deputy Minister
L. M. FORBES

The Public Lands Division is responsible for the administration of public lands as defined in the Public Lands Act.

Public Lands are also leased for grazing, cultivation, recreational, commercial and industrial uses, including those surface leases related to the oil and gas extraction industry. Suitable lands may be sold for certain specified purposes such as farms, subdivisions, plant sites, etc. Public lands are also used for the establishment of grazing reserves, which are tracts of land developed by the division for livestock grazing.

The division is responsible for detailed classification of lands to determine their suitability for various purposes. Public lands may be reserved for the use of other departments and agencies and land-use restrictions are placed on certain public lands, limiting their use to specified purposes.

In order to provide a greater regional perspective with respect to the management of public lands, field staff have been assigned to five of the department's regions: Peace River, North East, Eastern Slopes, Central and Southern. The regional boundaries coincide with those of the other renewable resource divisions of the department.

Public Lands Division staff consists of 307 permanent employees and comprises three branches: Program Support, Public Land Dispositions, and Land Management and Development.

PROGRAM SUPPORT BRANCH

The Program Support Branch is responsible for field services and administrative support for the division and documentation services for the renewable resources divisions.

There was a division of responsibilities in the Peace River Region with the position of regional field services manager established and assigned to the new subregional office at Spirit River.

A total of 60 sections (240 quarter sections) was surveyed in the following townships: township 110, ranges 12, 17 and 18, west fifth meridian, and township 104, range 18, west fifth meridian.

A new subdivision comprising 25 lots was surveyed at Brule. During the year, 1 245 quarter sections were posted throughout the province for agricultural purposes.

Eighty-five grazing associations and co-operatives hold in excess of 405 000 hectares (1 000 000 acres) of public land under grazing lease or grazing permit. The branch is assisting these community pasture associations to achieve a fairer allocation of grazing privileges through a systematic review of their governing bylaws.

PUBLIC LAND DISPOSITIONS BRANCH

The Public Land Dispositions Branch is responsible for issuing and administering dispositions on public land for grazing, agricultural, commercial, industrial, residential, recreational and sand and gravel extraction purposes. Dispositions include sales, leases, licences, easements, permits and agreements.

The number of grazing lease applications received in 1982/83 declined approximately 20 per cent in comparison with the previous fiscal year.

Grazing conditions were favorable throughout most of the province in 1982 with some drought conditions in the northwest. The royalty percentages of forage value used to establish grazing lease rentals remained unchanged at 10 per cent for the southern district, 8.3 per cent for the central district and five per cent for the northern district.

Demand for agricultural dispositions on public land continues to be high with many more people applying for agricultural dispositions on public land than there is land available. Because of concern both by the public and by agricultural development committees throughout the province that lands not be left idle when leased or purchased, the trend is continuing toward issuing dispositions which require development within the initial years of new dispositions. Leases with option to purchase have proven to be the most effective method of ensuring such development because their term does not exceed five years. Lessees are permitted to convert to sale agreements as soon as the development requirements have been met.

A new policy of referring to Crown Debt Collections accounts more than two years in arrears and therefore requiring more intensive collection efforts has been established. It is expected this policy will improve the collection record for agricultural dispositions.

Industrial activity related to the oil and gas industry was down marginally from 1981/82; however, the number of applications received increased in the last quarter of 1982. Mineral Surface Lease applications, for example, increased by nine per cent over the same period in 1981 with Pipeline Agreement applications also increasing marginally for the same period last year. This trend has continued through the first few months of 1983.

Industrial activity related to coal exploration and development was also down compared with 1981/82 due mainly to uncertainty in international markets. The Robb Coal Mining proposal has been put on hold for at least one year. Other new coal development projects such as Hinton East, Mercoal and McLeod River proposals are at various stages in the government review process and it is expected lease applications may be submitted by the proponents of these projects in the near future. In 1982/83, however, the branch did issue leases to Union Oil of Canada Limited for mining and related facilities at its Obed Mining Project, a 3 000 000 ton-per-year coal mine near Obed, Alberta.

Additional major industrial developments for which public lands were made available in 1982/83 included the new Gulf Sour Gas Plant in the Obed area and the development of a new paper mill by B.C. Forest Products Ltd. near Whitecourt.

The trend continues to grow toward greater utilization of public lands by the public for recreational purposes . The number of recreational lease applications increased by approximately four per cent in 1982/83 compared with last year.

Interest in the seeding and harvesting of wild rice continues to increase, with 13 applications received in 1982/83 compared with nine in 1981/82.

LAND MANAGEMENT AND DEVELOPMENT BRANCH

The Land Management and Development Branch undertook operational level planning and development and provided the standards for land use so that land use decisions are in keeping with the primary or multiple use concept.

During 1982/83, under the government-funded Range Improvement Program, 383 individual applications and 27 grazing association applications for range improvement were approved. The work carried out included clearing, piling, trail and cross-fence line clearing, fence construction, seeding to forage and water storage projects.

Activities of the central Alberta range management unit continued to concentrate on applied range research, inventory and management planning. On-going research focused on the information needs for range management and improvement on public lands and included projects that dealt with prescribed burning, rotational grazing, forage establishment and woody regrowth control. In a supportive role to the grazing reserves and range improvement programs, range inventories and management-development proposals were completed for the Minburn, Rannach, Lucky Lakes, Beaverhill Lake and Peace River Slopes study areas.

In southern Alberta, range management staff continued with applied research projects such as varietal trial plots, vegetative response to Tordon, forage utilization and productivity, remote sensing research and effect of fire on grazing lands.

Utilization of the Three Creeks and Manning Provincial Grazing Reserves began in the 1982 grazing season. Development work continued on various reserves including the Hays Irrigated Grazing Reserve, which is used by sheep producers of southern Alberta. Range conditions throughout the 1982 season were favorable and good livestock gains were obtained at all reserves.

In co-operation with Alberta Recreation and Parks, the division continued work on the Ecological Reserve Program. This included selection of proposed reserves and natural zones of the province not yet represented by candidate reserves. Additionally, a number of proposed natural areas were added to the existing inventory for recreational and educational purposes. Management plans for several of these were begun with assistance from public interest groups.

Twenty-two reclamation projects were completed in a continuing program involving regular budget and Alberta Heritage Savings and Trust Fund monies. This program is part of an overall program of public land management with the goal of reclaiming surface disturbances on public lands in settled areas, where parties responsible for the disturbance cannot be determined, or for erosion control work.

Contracts were prepared and issued to a private consulting firm to conduct a detailed arable land inventory of 246 quarter sections (39 360 acres) as part of the department's accelerated land sale initiative. Of the total amount inventoried, 10 490 hectares (25 920 acres) were located southeast of Keg River and 5 439 hectares (13 440 acres) southeast of Valleyview. The work was completed and reports received.

Funding and construction of 86.9 kilometres of roads were undertaken by Alberta Transportation to provide access to newly-opened lands.

Road servicing was supplied to new lots in the hamlet of Brule. Subdivision plans have been completed for Zama City, Red Earth and Anzac. Development proposals were called for the proposed Saprae Creek country residential subdivision.

The reservation review project commenced in 1982. All Public Lands reservations placed prior to 1979 are being reviewed with those of other government agencies to determine their relevancy. The project is expected to take 18 months and is removing unnecessary land-use restrictions from public lands.

NOTE: The Public Lands Act of Alberta retains imperial measurement; therefore, Public Lands information in the ENR Annual Report is given in imperial and SI (metric) units. All other divisions report only in metric.

Fish and Wildlife

Report of the Assistant Deputy Minister
D. C. SURRENDI

The Fish and Wildlife Division assumes the responsibility of managing fish and wildlife resources in the province in a manner that provides maximum public benefits and ensures that viable populations are maintained for the enjoyment of future generations of Albertans.

Foremost in the division's achievements during the past year has been the formulation and acceptance by government of the Fish and Wildlife Policy for Alberta. The adoption of this policy was a fundamental step in securing a formal commitment by government to the protection, management and use of fish and wildlife. The policy is now in the implementation phase which will require extensive public consultation with numerous user groups on various aspects of the policy.

Various elements of the Fish and Wildlife Policy deal directly with the maintenance of fish and wildlife populations at viable levels for the benefit of Alberta residents today and in the future. In response to this policy direction, a Fish and Wildlife Resource Plan is being prepared. The plan will identify present fish and wildlife population levels and make projections on the future uses of these populations, future population goals and the habitat base required to sustain these populations. The intent is to submit this plan for government approval in 1983/84.

In association with these activities, the Wildlife Act is also being redrafted. Several modifications to the present act are being addressed including such items as Alberta's proprietorial rights with respect to wildlife, special provisions for rare and endangered species, greater protection for private landowners and fewer regulations for resource users.

The division established a Resource Economics and Assessment Section. This unit will provide support to the assistant deputy minister in ensuring cost-effectiveness of programs and technical expertise on programs such as the socio-economic evaluation of fish and wildlife resources.

ADMINISTRATION SERVICES BRANCH

The Administration Services Branch has concentrated on development of policy procedures and guidelines and evaluation of the effectiveness of the overall administration of the Fish and Wildlife Division. It co-ordinates the development of the divisional budget and ensures that financial management of the division meets the requirements of the Financial Administration Act.

The 1982 special licence and authorization draws for big game hunting attracted 35 369 individuals. They submitted, in combination, 100 614 applications and were issued 6 475 licences and 23 620 authorizations.

In addition, staff participated in numerous committees and training sessions inherent in the new aspects of the department. Involvement continued with the interdepartmental and departmental committees.

The Administration Services Branch was instrumental in co-ordinating the shift of budget allocations and the corresponding transfer of people and positions to meet the changing commitments of the Fish and Wildlife Division.

PUBLIC INFORMATION AND EXTENSION BRANCH

The Public Information and Extension Branch is the primary unit of the division interfacing with a variety of interest groups and the public. To deliver its message a number of information and educational materials are produced annually.

This branch consists of the Resource Education, Conservation and Hunter Education and Public Enquiries units. These groups work closely with various public organizations, educators and special-interest groups as well as other government agencies to promote programs on fish and wildlife management and hunter education, emphasizing various consumptive and non-consumptive uses of fish and wildlife resources. In 1982, emphasis was placed on the preparation of fishing, hunting and trapping regulation summaries, boating restrictions, editorial reviews of technical reports and popular brochures, and talks to the public.

The branch arranged a variety of meetings in 1982. The highlight of the year was the first annual Bighorn Awards' celebration to honor individuals and organizations contributing to fish and wildlife conservation in Alberta. Numerous public inquiries were acknowledged by telephone, mail, personal visits or through the ENR Information Centre on the main floor of the Bramalea Building, Edmonton. Most information requests from the public focused on assistance with the interpretation of regulations.

Close liaison was maintained with ENR Public Affairs and Resource Information Services. Production of the division's news releases, communication materials and the preparation of responses to special issues was shared with Public Affairs officers.

In addition, the branch served as the secretariat for the Fish and Wildlife Public Advisory Council. Assistance was provided to the Canadian Wildlife Federation, the John Janzen Nature Centre in Edmonton, Fort Calgary, and at annual meetings of the Western Stock Growers Association, the Alberta Trappers' Central Association, the Canadian Insti-

Institute of Forestry, Rocky Mountain Section, and the Alberta Society of Professional Biologists.

Resource Education revised three wildlife brochures with the production and publication of *Owls of Alberta, Large Hawks and Eagles of Alberta,* and *Falcons and Woodland Hawks of Alberta.* Additional brochures on rabbits and large rodents, coldwater fishes, and warm-water fishes are in production for publication in 1983.

More than 200 000 wildlife brochures were distributed in 1982. Most of these went to schools and government agencies such as Kananaskis Country, AFS, and Recreation and Parks. Other publications in 1982/83 included *Sam Livingston Fish Hatchery & Rearing Station, Brooks Wildlife Centre,* and *Alberta's Wild Fur Resources.*

A 16 mm, 24-minute film, entitled *Habitat – A Place for Wildlife,* was produced by the Canadian Broadcasting Corporation (CBC) for the Fish and Wildlife Division. This film has been shown in Alberta and is available through the Conservation Education film library.

Fitting the Future Together, an audio-visual, was completed and is used by division staff in public presentations, especially for school career days. The production was also distributed to regional staff. It highlights the responsibilities and functions of the Fish and Wildlife Division and why its activities are necessary.

An interpretive display, highlighted with a diorama of a hen pheasant and chicks in nesting habitat, was constructed at the Brooks Wildlife Centre.

The popularity of Wildlife Week reached an alltime high in 1982. More than 15 000 Wildlife Week kits were distributed in co-operation with the Canadian Wildlife Federation. More than 1 800 entries were received in the provincial and national poster contest, about a thousand more than in 1981/82.

The Conservation Education Supervisor spoke at two Alberta Teacher Association (ATA) conventions on Project Wild, a new school conservation education program sponsored by the Canadian Wildlife Federation and provincial Fish and Wildlife agencies. Response from the teachers was very positive. Liaison continued with the Environmental and Outdoor Education Council of the ATA, and in a workshop for science teachers with the Edmonton Public School Board.

Information materials were prepared for Kananaskis Country including *Birds of Kananaskis Country,* and *Fish of Kananaskis Country,* both brochures. Input was provided on numerous committees to communicate Fish and Wildlife policy in keeping with department guidelines. Considerable involvement was devoted to the Kananaskis Interpretive Committee on interdepartmental displays, such as at the Gooseberry Centre.

In 1982, the Alberta Conservation and Hunter Education Program was recognized as the best program in North America, as judged by the National Rifle Association. In 1982/83, 9 000 students took part in the program, of whom 4 000 participated in the conservation camp programs.

The Fish and Wildlife Division is grateful to numerous individuals and organizations in Alberta for their time and work toward this achievement. The division is working closer than ever with the public to enhance sportsman-landowner relationships throughout the province.

Other achievements were 20 workshops for instructor upgrading. More than 200 instructors have been recertified through firearm instructor clinics, survival instructor seminars, hunter behavior and hunter techniques (field-oriented) classes. More than 500 instructors have received their certification at the basic instructor-level Class C. The certification program is progressing, and is a high priority with the instruction staff.

The compulsory testing program handled 139 people who had lost their hunting licences due to violations of the Wildlife Act and Game Hunting Regulations. There is close liaison between the Hunter Education and Enforcement personnel.

High priority continued on recertification of volunteer instructors, reflecting hunter-behavior modification, wildlife management, legal responsibilities and survival techniques. In close cooperation with noted experts Dr. R. Jackson and Dr. R. Norton and selected staff members, a pilot workshop was held on hunter behavior associated with trespass-and-access concerns involving landowners and sportsmen in southern Alberta. Strong support and constructive participation came from the Southern Alberta Outdoorsmen, a group of sportsmen and landowners in the Milk River Ridge Country. After considerable debate from all participants on the topic of trespass and access, the group concluded that regardless of the legal status of the land, including lease areas, users should seek permission before entering for any purpose. From this workshop came other ideas, including radio advertisements which encouraged hunters to respect private land and seek permission before entering occupied land.

Of special note was the group's commitment to conduct hunter education courses and to share hunting experiences by taking young people on hunting trips. A second important commitment involved talking to fellow landowners and/or sportsmen to solicit support on seeking permission to access land, and on the enhancement of good hunting practices. This group has placed a much higher priority on hunting conduct than in the taking of game. It is hoped this pilot project will grow.

Within the instructor upgrading program, two major field-oriented sessions were successfully conducted with students, one on field techniques related to moose hunting and the other one on waterfowl.

A novel activity involved a Hunter Education Olympics with Edmonton program graduates competing in seven events. This program was developed and promoted by a teacher, Dan Merrills, and will become an annual event at the Narrow Lake Hunter Education Camp. Assistance with preliminary preparations was provided for conservation/hunter education camps in Kananaskis Country and near Lac Bellevue in the St. Paul area. The latter camp involves close liaison with Fish and Game personnel in northeastern Alberta.

In-service firearms training programs were conducted by branch staff for Fish and Wildlife Division officers and by other staff of other jurisdictions.

HABITAT PROTECTION

During 1982/83, reorganization within the division resulted in the new Habitat Protection Branch with emphasis on representing to government agencies and industry the division's interests on habitat protection and enhancement opportunities. The major effort was habitat protection within existing referral processes with emphasis on planning. Recognition of the importance of public involvement cannot be overstated in the development of habitat and/or integrated resource plans. Various public organizations helped to develop a fish and wildlife management plan for the Dickson Dam reservoir, to review drainage and wetland management problems in Alberta and to examine alternatives for mitigating access problems.

Planning for the protection of the habitat needed for raising the fish and wildlife falls into these categories:

(1) Plans initiated by other agencies to which Fish and Wildlife staff have to respond. Examples of these in 1982/83 were:

(a) Integrated management plans, such as Castle River, Big Bend, Lakeland, Brazeau-Pembina, Rocky-North Saskatchewan, Kananaskis Country, Ghost River, Berland Regional Plan, Willmore, Cold Lake, Livingstone-Porcupine Hills, Jean D'Or Prairie, Sturgeon Lake-Puskwaskau East, Frost Hills, Nordegg-Red Deer River Plans.

(b) Municipal plans, such as the Draft Regional Plan of the Oldman Regional Planning Commission, the Southeast Alberta Regional Planning Commission, and the Southeast Economic Diversification Study.

(c) Alberta Heritage Savings Trust Fund Provincial Grazing Reserve Programs, such as Sang Lake, Blackfoot, Pembina and Rocky Mountain House.

(d) Water basin plans, such as the South Saskatchewan River Basin, Beaver River and Battle River plans.

(e) Tourism plans, such as the Southeast and Southwest Alberta Tourism Plans.

(2) Plans developed by the Habitat Protection Branch on behalf of the division. Examples of these in 1982/83 were plans for fish and wildlife enhancement associated with the Dickson Dam project, Buffalo Bay project, Slave River proposal, Ducks Unlimited/Fish and Wildlife Wetlands For Tomorrow Program, Agricultural Expansion/Intensification plans related to public patented lands and water drainage programs.

(3) Provincial plans. Staff of this branch are currently seconded to the office of the assistant deputy minister to prepare the Fish and Wildlife Resource Plan for Alberta in response to the requirements of the Fish and Wildlife Policy for Alberta. It is anticipated the resource plan will be made final in 1983.

Co-ordinating and handling the referral systems for the division is a prime function. Several plans from regional planning commissions and local authorities were reviewed and fish and wildlife resource concerns incorporated. Environmental impact assessments for Manalta Coal plus the Energy Resources Conservation Board hearings for that project were reviewed and attended. The Habitat Protection Branch is also the division's focal point for assessment and investigations concerning the Amoco-Dome Brazeau River blowout.

There has been a major thrust to co-ordinate the division's land interests in the land acquisition program and the Crown reservation system. This requires the branch to designate by maps and files the status of the land over which it has majority control and to ensure the division's programs are protected in these areas when dealing with applications for other land uses.

The Fisheries Habitat Protection Guidelines were updated with six new guidelines prepared which are under review. A study was conducted on the Sheep River to determine which instream flow methodologies are acceptable and practical in Alberta. Once the methodology is determined and accepted, the division will be able to quantify the water requirements for fisheries in Alberta's rivers. With ever-increasing water demands this program is extremely important.

The Jasper Conference to foster increased understanding and co-operation among AFS, the Fish and Wildlife Division and forest industry was held in the spring of 1982. This successful gathering has spawned a department-approved program to interface wildlife and timber harvesting objectives. The forest industry was positive in its response to the program and work in this co-operative program is to begin on the St. Regis Forest Management Agreement Area.

The pilot Forest Vehicle Route is a departmental program developed to provide resource protection by encouraging non-commercial vehicle travel to specific trails. The pilot area is proposed in the forest and mountain area between Rocky Mountain House and Edson. Whether the pilot program proceeds, an evaluation will take place to determine whether this management technique can be used in other areas of Alberta. It is intended that this program interface with current Integrated Resource Planning initiatives.

FIELD SERVICES BRANCH

The reorganization of the division resulted in some identity changes during the past year. The Enforcement and Field Services Branch is now known as the Field Services Branch and the duties will, for the most part, remain the same. Problem wildlife specialists and culturists have been reclassified as Fish and Wildlife officers and are now uniformed. Nuisance wildlife matters are now the responsibility of the district officers at the district level.

Restructured branch headquarters now comprises four sections:

- Standards and Operational Planning Section, responsible for developing programs, procedures and guidelines as well as monitoring the cost effectiveness for all operational matters, most notably the Nuisance Wildlife Program, enforcement programming, Livestock Damage Indemnity Program (LDIP), administration of livestock claims pursuant to Wildlife Damage Fund and the Found Dead Wildlife program.
- Regulations Section, accountable for the development, review and control of regulations administered by the division in addition to the Provincial Boat Safety Committee and the Boating Restrictions Regulations responsibilities.
- Special Investigations, which undertakes special assignments and is also responsible for policing illegal activities of interprovincial or international significance.
- Forensic Science, responsible for the development and provision of advanced scientific services to the province's law enforcement program.

The function of the Fish and Wildlife officer service remains the same. Emphasis continues to be placed on maintaining a high-quality public service with emphasis on effective administration of resource legislation, meaningful response to public inquiries, nuisance wildlife control and community and public relations programs.

During 1982/83, service offices were established at Vulcan, Hanna, Coronation, Leduc and Fort Vermilion through reassignment of existing personnel.

Participation in the National Boat Safety Check Program with seven other provincial and federal agencies continued. Fish and Wildlife officers conducted water vessel safety checks in conjunction with regular angling patrol responsibility. In the 1982 season (May to September) officers inspected 5 353 vessels for compliance with small vessels regulations. This was an increase of approximately 34 per cent over the previous season. A total of 15 220 persons were contacted during these checks. Of the total number of vessels checked, 4 753 (89 per cent) were found to be complying with small vessel regulations. This represented an increase of 19 per cent over the previous season. A total of 947 warnings were issued and 385 prosecutions undertaken pursuant to small vessels, fisheries, liquor and related regulations during the program.

The Field Services Branch implemented a new version of the prosecution reporting system, which enables prosecution information to reach headquarters much earlier. The change gives a much more accurate accounting of the division's provincial activity at any given time. The program data represents a substantial increase in volume over the same period last year. This is due to the inclusion of pending cases which under the previous system were not recorded as promptly.

Tables 40 to 47 summarize Fish and Wildlife enforcement data for prosecutions initiated in the 1982/83 fiscal year. A 15.1 per cent increase in prosecutions was recorded as 4 317 cases were initiated, compared with 3 750 in 1981/82. Table 42 summarizes the various types of prosecutions undertaken in 1982/83.

Table 41 indicates the type of prosecutions processed by act, and table 40 sets out a breakdown of convictions under the Wildlife Act. The highest percentage of prosecutions occurred under the Wildlife Act and the Alberta Fishery Regulations.

This trend is similar to the previous fiscal year. The average fine for conviction under the Wildlife Act is $121.11 which is higher than the average fine reported in 1981/82 ($92.15). The largest fines were for offences relating to night hunting ($538.40) and for hunting at unauthorized times ($189.03).

Table 43 indicates the pleas entered. Of the 3 691 prosecutions concluded, 91 per cent admitted guilt either through a court appearance or voluntary payment ticket.

Table 44 summarizes convictions resulting in licence suspension. A total of 479 convictions resulted in licence suspensions, the largest number being for big game and bird game offences. Big game and bird game suspensions carry a compulsory hunter test requirement. Table 45 illustrates the age breakdown of hunters required to take the test, and table 46 contains the breakdown of ages for all convictions.

During the 1982/83 fiscal year, the Field Services Branch initiated development of a computerized Animal Incident Documentation System to provide detailed documentation of all occurrences handled by Fish and Wildlife officers. These occurrences include public complaints respecting nuisance wildlife, incidents of illegal resource use, environmental damage and related matters. The system was implemented on August 30, 1982. Once fully operational the branch will have the ability to retrieve program information within 24 hours, which will assist in providing current information for management. The system is designed to provide information in evaluating public service activities and programs such as Found Dead Wildlife, Nuisance Wildlife, illegal hunting, trafficking in wildlife, etc.

The largest demand for service reflected in the occurrences concluded relates to nuisance wildlife complaints (37.3 per cent). Of these, the most common problems were beaver, bear, skunk and ungulates. A total of 2 604 road kills were processed (11.7 per cent) and 1 370 applications to retain found dead wildlife were received. A total of 5 355 occurrences related to enforcement matters with the majority concerning illegal hunting, closed seasons, etc. Overall, 22 161 occurrences were concluded and documented on the system.

The Forensic Service provided technical and scientific assistance in 79 investigations. In addition, services were provided to other provinces and departments not having forensic expertise.

The return of nuisance wildlife specialists and culturists to the officer series produced interesting results. Most significant is the positive cost benefit of the program. During 1982/83, there were 8 251 occurrences, an 18.8 per cent increase over the 6 950 occurrences in 1981/82. In 1982/83, district offices responded directly and assumed full responsibility for those occurrences. This required approximately half the time from the previous year, while accommodating 1 301 more occurrences.

FISHERIES MANAGEMENT BRANCH

The Fisheries Management Branch manages the aquatic resources in the province to ensure that viable fish populations are maintained for the benefit and enjoyment of Albertans. The basic goals of the Fisheries Management Branch are:

- To develop and maintain a habitat base consistent with fisheries resource supply requirements.
- To provide fishing opportunity for domestic use.
- To provide the greatest amount and variety of fishing opportunities for recreation.
- To facilitate the development of economically viable industries based on the commercial use of fish.

The Fisheries Management Branch consists of five sections: the Sport Fisheries Management Section, the Commercial Fisheries Management Section, the Fish Culture Section, the Fisheries Habitat Inventory and Development Section, and the Biological Services Section.

The Sport Fisheries Management Section was involved in a fish stocking program, the development of sport fishing regulations, a walleye enhancement program, checking lakes and streams to assess their production of fish and the effectiveness of management programs, and the development of public access facilities.

The fish stocking program was directed at 258 lakes and streams with a total of 5 790 128 fish. This program increased from 234 lakes and a total of 4 184 591 fish in 1981/82.

The 1982/83 stocking program was made up largely of trout, with some yellow perch, northern pike and walleye (table 48). The distribution of stocked fish, by administrative region, is given in table 49. The fish stocking program provides angling opportunity in areas where there are few fish naturally and provides species variety.

Experimental angling regulations were implemented on the North Ram River to create a catch and release fishery. This requires the angler to return all fish caught back to the water as a way of maintaining catch success levels, to allow the fish to spawn and to allow other anglers the experience of catching these fish. This is an experiment to see whether the fish population will increase in number and size and whether a purely recreational approach to fishing is acceptable to anglers.

A fisheries management project continued on the Bow River, with assessment of angler catches, fish population size and growth and the identification of fish spawning areas. This project is designed to protect large trout for spawning and recreational use in the Bow River.

The walleye management program was directed at maintaining naturally-reproducing populations of walleye and at enhancing and developing walleye populations that were very much below historic population levels. Seven areas were closed to angling for two months to protect natural spawning populations of walleye. The walleye enhancement program continued on an experimental basis to find and assess spawning populations from which eggs could be taken for stocking other areas. Small numbers of walleye were raised in dugouts and potholes to assess their growth and survival. The walleye taken from the experimental rearing were stocked in three lakes. In addition, two man-made ponds, where growth and survival can be better controlled than in natural ponds, were leased for future walleye production. Staff members were sent to the United States for training in walleye culture programs.

Surveys were carried out on 200 lakes and streams to assess habitat conditions, the condition of the fish population, the amount of winterkill and the effectiveness of the fish stocking programs. These surveys provide the information necessary to determine the stocking program and the recommendations for new regulations and program needs.

The public access development program, initiated in late 1981, was brought into full implementation in 1982 with the development of four sites complete with parking, sanitary facilities, standard signage and boat launching facilities. An inventory of access facilities on 230 stocked lakes and 10 other lakes was completed and will be the basis for future development projects.

The Commercial Fisheries Management Section monitors and manages the commercial fishery in Alberta. Lakes are managed to accommodate sport and commercial fisheries. The main species taken by the commercial fishery is lake whitefish, with some of northern pike, tullibee, lake trout and walleye.

The fisheries management staff met with commercial fishermen to set fishing seasons and to establish quotas for each lake. There were 91 lakes open to commercial fishing during 1982 (table 50). Several meetings were held with the Freshwater Fish Marketing Corporation and with Fisheries and Oceans, Fish Inspection Branch, of the federal government to seek increased processing and marketing of Alberta fish in Alberta.

The Fish Culture Section is responsible for the operation of the Sam Livingston Fish Hatchery and the Raven and Allison Brood Fish Stations which provide trout for fish stocking. The section administers private and commercial fish farming activities.

To provide the number of trout required for the trout stocking program, 3.25 million rainbow trout eggs were imported from the United States, with an additional two million rainbow trout eggs produced at the Raven Brood Fish Station. In addition to the rainbow eggs, 400 000 eastern brook trout eggs were also produced at the Raven Station.

Trout eggs were also taken from wild stocks of fish, brown trout eggs from the Bow River, lake trout eggs from Cornwall Lake, and cutthroat trout eggs from Job (Wilson) Lake.

Species composition of the hatchery trout production in 1982 was: 4 822 736 rainbow trout, 246 280 lake trout, 93 565 cutthroat trout, 266 732 eastern brook trout, and 8 242 brown trout. The total production of fish by weight was 75 000 kilograms, which exceeded any previous year. In 1981, 55 063 kilograms were produced.

The Allison Brood Fish Station was completed in 1982, and its trial operation initiated. This station is designed to produce trout eggs, particularly brown and eastern brook trout, for the hatchery program to ensure the availability of trout eggs, not leaving the program to variable United States sources or wild populations of fish. A small egg production is expected in 1983 with full production reached in two to three years.

A fish hatchery is planned for Cold Lake in northeastern Alberta, chosen after examination of sites in the area. The conceptual design has been completed for a hatchery to produce four million rainbow trout and up to 80 million walleye fry. Construction is to begin in 1983 with completion in early 1985.

Fish rearing facilities near Lake Wabamun which use the warm water from the Sundance Power Station have been acquired and will be operated as a rearing station to produce initially 200 000 yearling trout. These fish will be used for stocking heavily-used lakes and potholes – where winterkill is a problem.

Private and commercial fish farming operations showed a slight decline in 1982 with 1 605 licences being issued, down 110 from 1981. The reduction was primarily because of the lack of fish to purchase for these operations. Private fish farming is the largest part of this operation, making up 1 560 of the total. These fish farms are generally small ponds and dugouts stocked with 300 to 500 fish for personal recreation and food. The 45 commercial operations generally purchase fish from suppliers outside the province and resell them to the private operations.

The Fisheries Habitat Inventory and Development Section funded 21 projects from the Buck for Wildlife program. These included three stream fencing projects, eight reservoir maintenance projects, two reservoir improvement projects, two reservoir development projects, four lake stabilization projects, one lake improvement project and one stream enhancement project. Eight of these projects were completed in 1982 and 13 carried over until 1983 for completion.

Fish resource and habitat inventory is an ongoing program designed to provide information on the distribution of fish, their habitat and the production capability of that habitat. Existing information has been translated onto large-scale maps for use by the division and other agencies. Work is continuing on developing computerized storage and retrieval of this information for management, development and habitat protection purposes.

The Fisheries Biological Services Section is responsible for providing specialized technical assistance to all sections of the Fisheries Branch. The section continued work in the production of walleye fingerlings in potholes and dugouts, the improvement of walleye hatching techniques in the hatchery, the effects of temperature changes on walleye egg hatching and survival, and methods of marking walleye fingerlings for later evaluation of growth and survival.

WILDLIFE MANAGEMENT BRANCH

The Wildlife Management Branch's responsibility is planning for the proper use of the wildlife resources for the province, ensuring an adequate supply of wildlife for the enjoyment of all Albertans.

With reorganization complete, a policy formulated and goals and objectives laid out, the Wildlife Branch is moving ahead with providing the planning and co-ordination required to assure wise use of the resources.

The Biological Services Section contains the research unit of the Wildlife Branch. Studies are conducted on the environmental and physiological causes of bighorn mortality and the factors limiting numbers and distribution of mountain and woodland caribou. Long-term projects include an evaluation of controlled deer and grouse hunts in Camp Wainwright and an appraisal of relocating Canada geese throughout central Alberta.

The Brooks Wildlife Centre, part of the Wildlife Culture Section, was responsible for propagation and rehabilitation of upland game birds, waterfowl and raptors. The 1982 pheasant-breeding flock consisted of 5 562 females and 515 males. They produced 203 577 eggs which hatched 115 156 chicks. A total of 96 441 chicks was released, and 44 940 chicks (46 per cent) given to 4-H clubs, fish and game clubs, Upland Birds Alberta and private raisers. The Wildlife Branch also provided $10 000 grants each to the Alberta Fish and Game Association and Upland Birds Alberta for construction of pheasant-rearing facilities. Wildlife Centre personnel released 51 501 pheasants into suitable habitats in southern, central and northeast regions of Alberta. These birds were used to supplement or establish local populations and as an incentive for landowners to retain or develop wildlife habitat.

A provincial management plan for ring-necked pheasants in Alberta is also being developed to manage both the wild birds and pheasants produced at the centre. In addition 79 698 coturnix quail were raised at the Brooks Centre from 129 834 eggs. Eighty-one per cent of these were used in the peregrine rehabilitation program , while the remainder was utilized in other programs.

During 1982/83, approximately $727 000 was allocated to 27 Buck for Wildlife Projects administered by the Wildlife Habitat Management and Resource Section. On-going projects comprised 17 of these projects while 10 were new and in the planning stage. Project locations, budget allocations and development activities are summarized in tables 51 and 52.

In 1982, work began on evaluating grazing as a wildlife management tool on the Lychak property in the St. Paul – Two Hills area. Evaluation of the effects of several methods of mechanical clearing to create ungulate browse is also continuing on the Birch Hills project. The objective of these evaluations is to increase the efficiency of managing wildlife habitat.

Several large-scale habitat management plans are currently in various stages of development. Chip Lake, Buffalo Lake and Rochester are some of the areas requiring in-depth integrated management plans.

Range improvement for elk continues at Athabasca Ranch with two additional projects anticipated in the Northeast (Elk Intercept) and Eastern Slopes Regions (Elk Winter Ranges). Preliminary work aimed at protection and improvement of antelope wintering range (Walsh Flats) in the Southern Region commenced in 1982.

Many multiple-species management efforts continued to receive attention, notably through the Landowners Wildlife Habitat Program in the County of Red Deer, and the Beaverhill Lake, Slack Slough and Shelterbelt Maintenance Projects.

The habitat mapping pilot projects, with study areas located in the Buffalo Lake and Rocky Mountain House areas, are virtually complete. This project has developed a basic methodology and approach to be used for systematically mapping and evaluating habitat for various wildlife species over extensive portions of the province. A detailed proposal for such an inventory is in the final stages of preparation.

A manual which outlines habitat mapping procedures and documents the primary habitat requirements of several important wildlife species has been prepared in conjunction with the pilot project maps. Analysis procedures used to evaluate habitat quality are being refined through the use of computer graphics.

A general vegetation cover/land use map of Alberta is being prepared by interpretation of satellite images and selected air photos. The final map will be drafted at a scale of 1:1 000 000 and is designed to assist in the calculation of current habitat supplies for various wildlife species as needed by the Fish and Wildlife Resource Plan for Alberta. This map will also serve as a framework for priorizing more detailed habitat efforts within the province.

Population data (relative abundance, distribution and composition) provided by aerial inventories form the basic framework for species management strategies. During the 1982 calendar year the provincial population inventory program used 1 480.6 aircraft hours to obtain data requirements on a wide variety of wildlife species. Categorized species totals are provided in table 54.

The Wildlife Management Section is involved in the development of a management definition statement for each major wildlife species and each benefit area which makes use of the wildlife resources. Another priority project is the reviewing of the hunting regulations for the purpose of deregulating and simplifying the document. Game ranching continues to stimulate public interest. The wildlife ranching project at the Kikino Metis Settlement is now well under way with the addition of 10 cow elk this year.

Humane trapping was in the forefront for most of this year. Fish and Wildlife is still actively involved in the testing of more-humane trapping techniques. As in the past, the Wildlife Branch has continued to work with all interested outside groups in these matters.

Recreational hunting of big game in Alberta continued to be good during 1982/83. Southern parts of the province supplied excellent hunting for moose and elk in the foothills and both species of deer throughout the area. The high populations of all big-game species in southern Alberta can be attributed to a series of mild winters. Pronghorn and bighorn sheep and mountain goats continued to increase.

In northern Alberta, moose numbers decreased slightly because of a combination of severe winter weather in 1981/82 and the effect of heavy tick infestations. Moose hunters in northern Alberta were less successful in the fall of 1982 as a result. Surveys indicate that the tick problem has subsided because of reduced tick survival in the spring of 1982. Though hair loss was evident on some moose late in the winter of 1982/83, the magnitude of the problem seems to be less and few moose mortalities have been reported this year.

Elk transplants to the Pelican Mountains and Amadou Lake regions were studied by following radio-tagged animals to determine their fate. Although some mortality has been documented, the division is hopeful that a core breeding herd for this elk population has been established. Evaluation of this project will continue.

No further transplants of elk to the boreal forest regions of Alberta are anticipated for the near future, but the Pelican Mountains and Amadou Lake projects have provided valuable knowledge that will assist any future attempts to establish viable elk populations in new regions.

Mild winter conditions in 1982/83 will benefit big-game populations in Alberta. All species in southern regions are expected to increase.

Hunting regulations were revised in early 1983 for the fall hunting season. Amendments were passed in time to have the new game hunting synopsis to the public by June 1. One of the major changes was a general hunting season of three months' duration for trophy male elk in Kananaskis Country. This replaced an authorization season in that area. The number of authorizations for which an individual may apply was reduced from three to two. A fall grizzly bear authorization season was instituted and moose, deer and non-trophy sheep hunting opportunities were increased in some Wildlife Management Units. All-terrain vehicle restrictions were removed from some parts of Big Game Zone 5 in order to allow better access during the hunting season. Wolf licence fees for non-residents and non-resident aliens were reduced to encourage a larger harvest of wolves.

The peregrine falcon recovery program jointly conducted by the Fish and Wildife Division and the Canadian Wildlife Service (CWS) continued in 1982. The objectives are to reintroduce peregrines to their historical range in Alberta and to supplement the remnant wild population in northern Alberta. Seventy-nine young were captively raised at the CWS Wainwright Raptor Facility, an additional 12 were raised at Black Diamond. Nineteen young were held for breeding stock. The remaining 72 young were distributed to release sites throughout Canada.

Twenty-two young peregrines were released in Alberta. Two were fostered to a pair of breeding peregrines in Edmonton. Seven young were released from historical nest sites along the Red Deer River and 13 released from cliffs in Kananaskis Country. The adult pair returned to the AGT Toll Building in Edmonton again in 1982. Four eggs were laid, but were accidentally broken by the adults during incubation. Dummy eggs were placed in the nest and later replaced with two 10-day-old captive-raised young. These were successfully fledged. Of the pair of falcons established at the O.S. Longman Building in Edmonton in 1981, only the male returned in 1982. He remained at the building until September but was not able to attract a new mate.

The remnant wild peregrine population in northern Alberta had a difficult year. Only five pair established known nesting territories; of these only four pair nested. Poor nesting success coupled with extremely strong winds and rain during the fledging stage resulted in very poor production. Mortality of the 1982 offspring may have been 100 per cent.

In 1983, releases will again be conducted at sites along the Red Deer River and monitoring of and supplementing the remnant wild population in northern Alberta will continue. A greater emphasis will be placed on determining the pesticide levels currently found in the peregrine and its prey species.

The results of a co-operative (Fish and Wildlife Division/Canada Wildlife Services/U.S. Fish and Wildlife Services) waterfowl population survey indicated the number of breeding ducks in 1982 was again well below the long-term average. This was due to a continuing winter drought which greatly reduced suitable nesting habitat. Spring rains, which came too late to be of noticeable value to waterfowl seeking suitable nesting areas, did contribute somewhat to brood survival by maintaining water levels on the more permanent wetlands.

The 1982 fall flight, while much below that enjoyed between 1969 and 1976, was comparable to the five preceding drought-reduced seasons. Hunting conditions varied throughout the province during the flight, which extended into November in most parts of the province. Overall, hunting opportunity and harvest were only marginally different from the previous season. The 1982 season marked the end of the fourth year of the Prairie Harvest Management Program, an agreement which will allow fixed or stabilized duck regulations over a five-year period.

Alberta's breeding population of large Canada geese was also affected by dry spring conditions, especially in the south where some nesting islands were high and dry or separated from the mainland by only shallow water. Breeding pair surveys indicate that the population growth experienced in recent years is now stabilized. Gosling surveys on major nesting lakes and the southern rivers showed production to be lower than in 1981 and below the average of recent years. Northern production of Arctic-nesting snow, white-fronted and lesser Canada geese was average to slightly below average, with southward migration a little earlier than normal in most parts of the province. Very dry fall conditions in the major east-central staging area again resulted in a filtering-through of migrant geese rather than any build-up or major concentrations.

More than 1 000 resident Canada geese in southern Alberta were live-trapped and banded. In addition, more than 400 goslings with adults were banded during the transplant program and many were moved to several habitat improvement projects in the central part of the province. In the southeastern part of the province, 144 goslings in the company of 12 adult females were released on selected wetlands as part of a co-operative venture with the state of New Mexico.

Again in 1982, reports emanated from Montana describing contamination of waterfowl by the pesticide endrin. There was concern in Alberta that some birds from the northern part of that state may have moved into the province as part of the post-breeding staging flights. However, tests conducted on more than 70 waterfowl from the central and southern parts of the province indicated no trace of endrin.

The Government of Alberta and the Government of Canada entered into one-year Crop Damage Prevention and Compensation agreements for damage done to agricultural crops by waterfowl. Each government committed $400 000 for crop damage prevention and $480 000 for crop damage compensation payments. Compensation rates remained at a maximum of $93 per hectare on crops that were standing, swathed or stooked at the time that damage occurred.

The relatively good fall weather of 1982 allowed a fairly rapid harvest of grain crops so damage by waterfowl was not extensive. Total crop damage prevention costs were about $400 000 while compensation payments amounted to $750 000.

For the 12th consecutive year, rabies in skunks and bats was monitored during 1982 by sampling various populations. Eight rabid skunks were collected by Fish and Wildlife staff in the Rosemary area; in total, 421 skunks were collected in southern Alberta. All 126 survey bats monitored for rabies were negative; rabies in bats has declined since the mid-1970s. Studies of rabies exposure of Alberta skunks and bats by serum analysis at the University of Toronto continue. An effort to develop a system of determining skunk density by capture (trapping)/ recapture (nightlighting) was carried out in the Warner-Foremost area during October. Results were unsatisfactory; however, progress was made and further development is planned for 1983. Movements of 20 juvenile skunks in rabies and control areas were determined by radio-telemetry; minimal dispersals may be important in the slow spread of skunk rabies observed to date in southern Alberta. Reports were prepared on the use of ketamine to immobilize skunks and on the dispersal, home ranges, habitat preference and other characteristics of rabid skunks.

A Bear Management Task Force was initiated. Preliminary meetings resulted in recommendations concerning bear response teams, bear equipment kits, extension programs, biological records of problem bears, relocation policy guidelines for handling nuisance bears, release sites, hunting management and research. A techniques manual for government staff describing methods for the prevention and control of wildlife damage was drafted with many divisional, department and other government employees contributing.

The fur industry has remained fairly healthy, although pelt prices on various species have declined from the general peak in 1979/80. These price trends reflect, in part, the worldwide economic picture. Nevertheless, revenue from Alberta wild furs was valued at nearly $10 million during 1981/82 and has averaged $12 million during the last four years. This revenue is important to a number of Albertans, particularly some in low-income brackets. Fur quality was poor for some species in certain regions, seemingly associated with the mild winter of 1982/83. Considering the reduced fur quality, pelt prices were generally good.

Snowshoe hares generally appear to have declined to moderately-low levels after peaking one to two years ago. Fisher continue to be plentiful in some forested regions, while lynx numbers are presently moderate but undergoing cyclic decline. The lynx requires careful management at this time as pelt prices remain high and trapping pressure is intense in some areas. Scientific studies have shown that very few kittens are added to winter lynx populations during snowshoe hare lows; therefore, trapping mortality can be added to natural mortality at such times and careful monitoring is required for this important and valuable furbearer. Another important furbearer, the coyote, seems plentiful in central Alberta; coyote hunting seasons were extended by one month in 1982/83. Beaver numbers remain very high, as the long-term trend to trapping more highly-priced furbearers is continuing. Beaver pelt prices have recently declined; however, they appear to have stabilized and an effective trapper can achieve a good return in trapping beaver through ice when pelts are most valuable. Many trappers do not know how to trap beaver effectively through ice; however, the Fish and Wildlife Division provides training in beaver trapping at trapper education workshops throughout the province. The beaver has tremendous ecological value in regulating watershed discharges and in creating and maintaining habitat for other wildlife species, in addition to its economic value in the fur trade. The division aims to increase the beaver harvest to prevent a further general increase, and to reduce beaver numbers locally in some chronic problem areas. Wolf numbers are also high and trapper harvests are low. The division has also increased emphasis on wolf capture in the trapper education program.

The division provided special education programs (half-day) at 11 locations during 1982/83 to train trappers in wolf capture. Some 260 trappers received instruction, and 3 900 snares were also distributed to them to provide assistance in increasing wolf harvests. Additional snares were distributed to registered trappers attending the regular trapper education workshops.

Twenty-one week-long trapper education workshops were held at various locations. These courses attracted 436 participants. One advanced (four-week) course at Lac La Biche, designed to provide comprehensive training for potential trapping instructors, attracted 18 students. The trapper education program emphasizes pelt handling and preparation, and practical instruction in the use of the most humane devices and techniques available to trappers.

The Trapper Compensation Review Board reviewed 38 claims by trappers for damage and about $15 500 was paid out from the fund. Many additional claims were concluded in the field as a result of direct negotiations between trappers and representatives of the oil and gas industry. Generally, only disputed claims reach the review board. About 90 per cent of the total payments from the fund involved loss or damage to equipment or furs, inconvenience or vandalism. Draft policy guidelines were completed on procedures in evaluating and assessing claims.

Alberta Resource Industry Activities

ENERGY

Activity in the oil and gas industry of Alberta declined further from the depressed level of 1981, the result of a lingering worldwide recession, uncertain markets and the continuing effects of the National Energy Program.

Well completions were at 5 122, a 12 per cent decline from the 5 834 wells drilled in 1981. Exploratory drilling dropped 24 per cent to 1 769 from 2 330, while development drilling was only off four per cent, to 3 353 from 3 504. Despite the overall drop in the number of wells drilled, oil successes were up about 10 per cent in both categories, to 414 from 381 exploratory wells, and to 1 149 from 1 044 in development wells. The increase in oil completions indicates that exploration is being directed more toward oil prospects, reflecting a more buoyant market and higher prices for oil than for natural gas. The number of metres drilled was reduced by 17 per cent overall to 5 607 kilometres (km) from 6 766 in 1981, as drilling activity was concentrated on shallow wells in the oil-prone areas. Metres drilled in the exploratory category dropped 27 per cent to 2 300 km from 3 168 km, while in the development category metres drilled declined to 3 307 from 3 598, a drop of eight per cent.

Exploration dropped off considerably in 1982, although activity increased near year-end.

In northern Alberta, activity continued at a rapid pace in Zama-Shekilie where the search was for oil and natural gas in Devonian pinnacle reefs, and in the Golden-Evi-Lubicon region which yields primarily oil. In central Alberta, both new discoveries and extensions to existing pools were reported in Fenn-Rumsey and West Pembina.

For the 13th consecutive year, remaining established reserves of conventional crude oil declined, to 649.4 X 10^6m^3 (million cubic metres), a decrease of 47 X 10^6m^3 from 1981.

Initial established reserves increased by 39.9 X 10^6m^3, as 16.8 X 10^6m^3 were attributable to new pool discoveries, 16.5 X 10^6m^3 resulted from the reassessment of primary depletion and enhanced recovery pools, and 6.6 X 10^6m^3 were added by the commencement or expansion of enhanced recovery schemes. Remaining established reserves of synthetic crude increased marginally to 3 900 X 10^6m^3, as reserves of crude bitumen were re-evaluated.

Remaining established reserves of marketable natural gas also increased slightly to 1 853.1 X 10^9m^3 (billion cubic metres) from 1 795.3 X 10^9m^3. Of the 119 X 10^9m^3 increase, 11 X 10^9m^3 resulted from new discoveries while the remainder was attributable to development drilling and to the reassessment of reserves.

The established reserves of natural gas in unconventional, low-permeability zones in the Deep Basin area of western Alberta, recognized for the first time by the Energy Resources Conservation Board in 1981, were reassessed and increased to 11.2 X 10^9m^3 from 10.3 X 10^9m^3.

Average daily production of crude oil and equivalent dropped by only 2.4 per cent to 187 X 10^3m^3 (thousand cubic metres). Conventional crude oil production fell five per cent as alternative fuels and conservation measures continued to limit demand for petroleum products in 1982.

Deliveries of crude oil and equivalent dropped marginally overall, to 186.0 X 10^3m^3 per day from 191.0 X 10^3m^3 per day in 1981. Deliveries to Canada excluding Alberta dropped to 123.0 X 10^3m^3 per day from 123.9 X 10^3m^3 per day, most significantly to Ontario where deliveries fell 15 per cent as many refineries reduced operations. Deliveries to Quebec and the Atlantic provinces, which had fallen quite markedly in 1981, increased by 18 per cent as the federal government began subsidizing movement of Alberta light crude to the Atlantic region and displacing offshore oil. Deliveries to the United States had also fallen in 1981 but turned around in 1982 to increase by 23 per cent to 24.4 X 10^3m^3 per day. The increase resulted as surplus volumes of heavy crude oil were exported to refiners in the northwestern U.S. Competitive pricing and the extension of licence terms by the National Energy Board were also effective incentives in increasing exports.

Production of marketable natural gas increased marginally to 64.1 X 10^9m^3 from 62.0 X 10^9m^3, as an increase in residential demand was largely offset by a substantial decrease in the industrial sector. Deliveries within Alberta were up slightly with an increased demand in the residential and commercial sectors but deliveries to the rest of Canada decreased marginally to 25.3 X 109^9m^3 from 25.7 X 10^9m^3. Deliveries to the U.S. were up eight per cent to 19.9 X 10^9m^3, reversing the trend of recent years. This increase was primarily due to the commencement of exports through the prebuild section of the Foothills pipeline.

The production of propane and butanes remained at virtually the same level as in 1981. Propane production remained steady at 15.0 X 10^3m^3 per day while butane production fell only slightly, to 9.1 X 10^3m^3 per day from 9.2 X 10^3m^3 per day.

Bonuses received from the sales of petroleum and natural gas rights declined 40 per cent in 1982 to $334 million from the 1981 total of $588 million. The Northern area was the most active with 80 per cent of the bonuses totalling

$264 million, but this was down 40 per cent from the $424 million in 1981. Bonuses from the Foothills region declined most significantly, falling 74 per cent to $14.9 million from $58.4 million, and bonuses in the Plains region were off by half, to $106.3 million in 1981. Hectares sold fell 30 per cent to 1.1 million from 1.6 million and the average price paid per hectare also fell, declining $72 to an average $300.

In April, the Government of Alberta introduced the Oil and Gas Activity Program to aid the conventional oil and gas industry which had been severely affected by the worldwide recession, high interest rates and the National Energy Program of 1980. The program aimed at increasing revenue flow to the industry by $5.4 billion through 1986 by way of a royalty reduction for conventional crude oil, natural gas and pentanes plus, and a royalty holiday for natural gas. Special measures for 1982 and 1983 were also introduced, including an enrichment of the royalty tax credit for small producers, effective September 1, 1981 through December 31, 1983. For the petroleum service industry, a $250 million grant program was established for certain service and maintenance work completed between April 15, 1982 and October 31, 1982.

In October, enhanced recovery incentives were announced by the minister of Energy and Natural Resources to encourage risky and costly methods of developing conventional oil reserves. The existing provincial incentive, a deduction from the royalties of some enhanced recovery costs, was enriched by increasing both the overhead cost allowance and the capital depreciation allowance.

Experimental work in the oil sands continued active, and at year-end 40 experimental projects were active in the Athabasca, Cold Lake and Peace River deposits. In July, an experimental plant with a production capacity of approximately 400 m^3 per day was opened in the Cold Lake deposit. Energy Resources Conservation Board approval was given for construction of a pilot plant with a capacity of approximately 1 100 m^3 per day at Wolf Lake in the Cold Lake deposit. Several other existing experimental schemes were expanded, increasing production of experimental crude oil.

Although the daily production of synthetic crude increased slightly to 19.1 X 10^3m^3 from 17.7 X 10^3m^3, both commercial oil sands plants encountered operating difficulties which limited production.

Marketable coal production in Alberta continued high in 1982, increasing eight per cent to 19.8 X 10^3t (thousand tonnes) from 18.4 X 10^3t in 1981. While production of bituminous coal remained at 6.8 X 10^3t, subbituminous coal production climbed by 13 per cent to 13.9 X 10^3t from 11.5 X 10^3t. Overall deliveries of marketable coal increased by 12 per cent to 19.8 X 10^3t from 17.8 X 10^3t. Deliveries within Alberta increased to 13.3 X 10^3t from the 1981 total of 11.7 X 10^3t as coal use in generating electricity increased substantially.

Coal deliveries to the rest of Canada declined as shipments to Manitoba and Saskatchewan fell 68 per cent and deliveries to Ontario fell 15 per cent. Exports of coal, however, rose in 1982 to 5.0 X 10^3t from 4.1 X 10^3t, as shipments to Japan increased significantly.

Coal exploration declined in 1982, affected by the general economic decline and the hiatus in the granting of coal leases while Alberta's coal development policy is under review. Exploration was concentrated near existing mines and proposed new mine sites in the Coal Branch region of west-central Alberta. Construction continued on the Gregg River Resources mine, the first new metallurgical mine in 10 years, which will produce two million tonnes of coal for export annually. Construction began on the Obed Marsh mine, which is scheduled to begin producing thermal coal by mid-1985.

Remaining established reserves of coal were at 16.5 X 10^9t (billion tonnes), a slight increase from the 14.7 X 10^9t of 1981.

FORESTRY

The forested area of Alberta covers more than 60 per cent of the province. Approximately 164 050 km^2 (square kilometres) are classified as productive forest land and an additional 71 905 km^2 having the potential to produce forest products. The remaining area is composed mainly of rock, muskeg and wetland and is not considered capable of producing timber.

There are approximately 1.7 X 10^9 m^3 (billion cubic metres) of wood in Alberta forests, of which 1.0 X 10^9 m^3 are softwood (spruce, pine, fir, larch) and 0.7 X 10^9 m^3 are hardwood (poplar, birch).

Alberta's present productive forest land will support an annual harvest of about 14.2 X 10^6 m^3 (million cubic metres) of softwoods and 11.7 X 10^6 m^3 of hardwoods. At the present time, the province has allocated cutting rights to industry under long-term quotas and forest management agreements, authorizing the annual harvest of almost 8.6 X 10^6 m^3 of softwoods and 0.4 X 10^6 m^3 of hardwood timber.

In 1982/83 timber production on Crown lands was 5.6 X 10^6 m^3.

Deciduous timber production approximated three per cent of total provincial timber cutting on

Crown lands. About 92 per cent of 1982/83 timber production was cut on forest management areas, timber licences, and commercial timber permits and the balance, eight per cent or 4.6 X 10^6 m^3, was cut through local timber permits.

The total value of forest products cut on Crown lands in 1982/83 was $214 million. Timber dues remained fixed at $0.70/m and the revenue collected by the province was correspondingly low. Relevant statistics for the forest industry are shown in tables 21 to 32.

LANDS

The total area of Alberta is 661 185 square kilometres (255 285 square miles) or some 66 million hectares (163 million acres). About 62 per cent is under provincial control, 10 per cent is federal Crown, one per cent is Indian reserves and the remaining 27 per cent is privately owned. In excess of 60 per cent of all lands in the province are nonsettled, largely the forested regions of the province.

Of the public lands under disposition, about 0.27 million hectares (0.67 million acres) are under disposition leading to title and include 0.15 million hectares (0.36 million acres) of civilian and veteran homestead sales and leases. About 2.89 million hectares (7.1 million acres) are under lease not leading to title, and include 2.30 million hectares (5.7 million acres) of grazing leases and permits. In addition, there is in excess of 0.28 million hectares (0.70 million acres) in grazing reserves.

Active development of grazing reserves continued during the past fiscal year and included such operations as clearing, burning, breaking, seeding, aerial spraying, fertilizing, fencing and water development. These development activities involved contracts covering some 66 000 hectares (162 000 acres) and cost $5.89 million, approximately $3.94 million of which was funded by the Alberta Heritage Savings and Trust Fund.

Economic deposits of sand and gravel are found extensively throughout Alberta. The major use of gravel in Alberta is in road building, which accounts for about two-thirds of the total used. Other major uses are for construction and for railroad ballast. Sand is also widely used in construction with the better quality types used in the manufacture of asphalt roofing and glass fibre products.

At fiscal year-end there were 450 sand and gravel leases and surface materials leases in effect on public lands. During the year, 896 surface materials licences were issued. The Public Lands Division levies a surcharge on sand and gravel removed from pits developed by the province. This allows for recovery of development costs and provides funds for reclamation.

Public Lands' revenue, including the sale of land, amounted to $26.7 million. Major contributors of revenue were the sale of public lands ($14.8 million), leases for oil and gas exploration and development ($4.4 million), grazing leases and permits ($3.6 million), sand and gravel and other surface materials royalties, surcharges, lease fees, and miscellaneous revenues ($3.9 million).

FISH AND WILDLIFE

The sale of fishing, hunting, and trapping licences maintained levels similar to previous years. The decline in the economy did not affect interest in fishing and hunting. In fact, many unemployed people seem to be spending more time in outdoor activities associated with fish and wildlife resources.

Sales of fish and wildlife permits, including trapping permits, fees, licence sales and royalties totalled $8 410 646.84. In 1982, there were 5 067 resident trappers and 2 972 registered trappers on 1 800 registered trapping areas in Alberta. No change in the number of fur buyers, taxidermists, tanners or furriers occurred in 1982.

Prices for fur remained constant with some species increasing in value, (e.g., fisher) while others declined slightly, (e.g., lynx, coyote) with others dropping in value (e.g., beaver). Low water levels in many central areas have significantly reduced muskrat populations. Despite these fluctuations, financial returns to the trappers were around $10 million in 1982.

Commercial fishermen in 1982 numbered 2 585 and caught 2 245 000 kilograms of fish, yielding a return with a market value of $3 213 411 (table 50).

Sportfishing licence sales were 343 375 in 1982. Fish planting programs, with emphasis on rainbow trout, involved 5 790 128 fish. Approval was given to proceed with a new hatchery and brood facility at Cold Lake for a major walleye enhancement project. This hatchery will significantly aid the rehabilitation and overall improvement of the popular walleye fishery throughout the province.

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Table 1

Exploratory Agreements Issued and Administered

Number, Hectares

Type	Active March 31/82	Issued	Reinstated	Divided	Renewed	Cancelled	Active March 31/82
Petroleum and natural gas reservations	**24** 212 276	— —	— —	— —	— —	**24** 212 276	— —
Natural gas licences	**6** 43 904	**3** 15 872	— —	— —	**2** 10 240	**5** 39 808	**4** 19 968
Oil sands prospecting permits	**17** 92 014	**2** 27 648	**1** 4 992	— —	**14** 74 400	**5** 38 862	**15** 86 944
Quartz exploration permits	**4** 26 368	— —	— —	— —	— —	**2** 21 248	**2** 5 120
Petroleum and natural gas licences	**2 277** 5 196 360	**472** 771 858	— —	— —	— —	**502** 1 206 478	**2 247** 4 744 445
Total	**2 328** 5 570 922	— —	— —	— —	— —	— —	**2 268** 4 856 477

SOURCE: Mineral Resources Division

Table 2

Active Mineral Leases

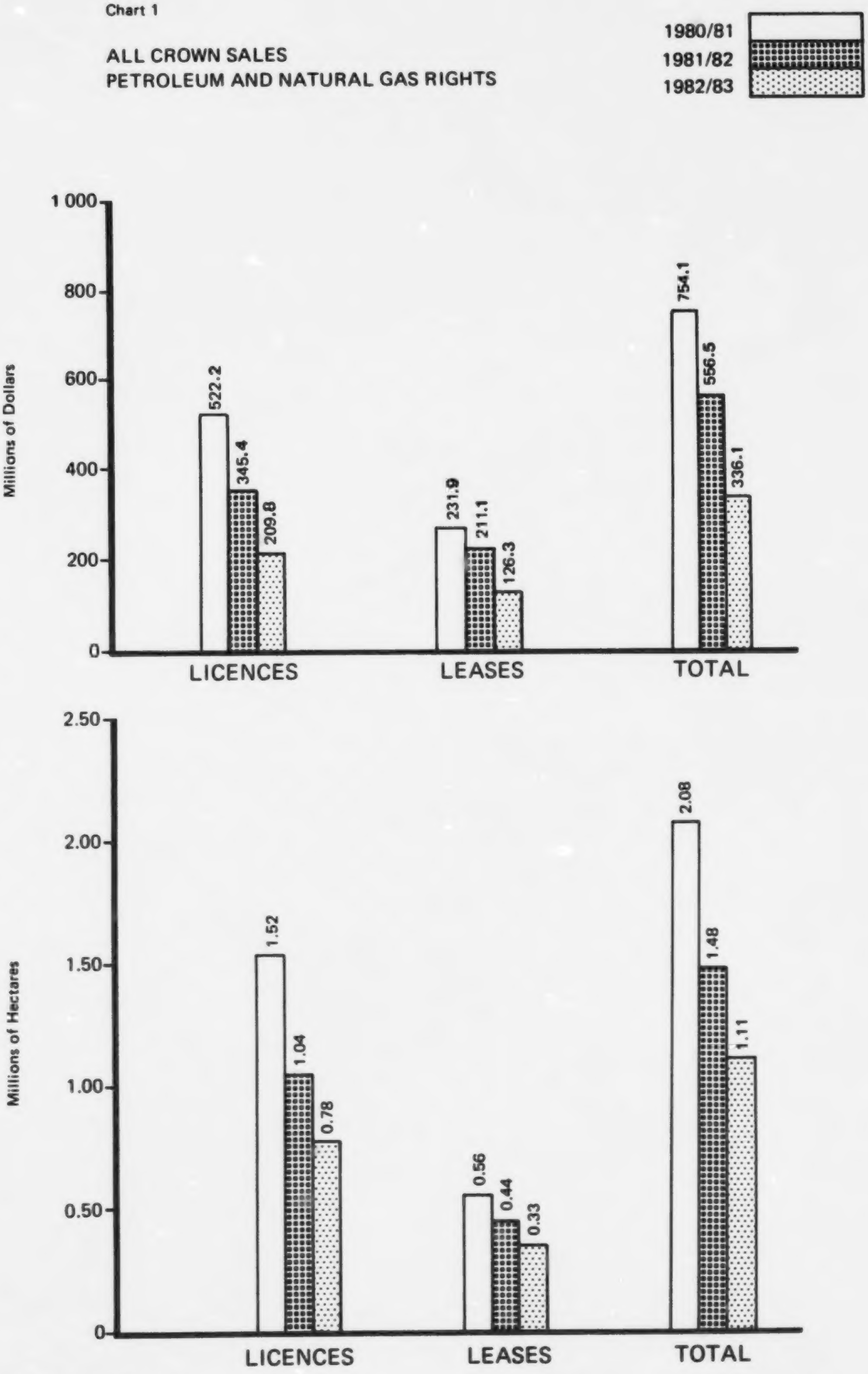
Number, Hectares

Type	Active March 31/82	Issued	Reinstated	Divided	Renewed	Cancelled	Active March 31/83
Petroleum and natural gas	**46 513** 22 739 925	**2 350** 1 580 016	**6** 3 337	**9** —	— —	**3 965** 1 683 920	**44 904** 22 491 360
Natural gas	**2 117** 3 624 707	**31** 62 361	— —	— —	— —	**50** 25 929	**2 096** 3 564 328
Petroleum	**27** 20 115	— —	— —	— —	— —	— —	**27** 20 115
Bituminous sands	**38** 444 129	— —	— —	— —	— —	**24** 334 781	**14** 109 348
Oils sands	**203** 2 054 417	**71** 1 136 965	— —	— —	— —	**46** 641 482	**228** 2 410 844
Coal	**3 258** 1 724 268	**63** 56 314	**1** 336	— —	**22** 5 492	**104** 51 696	**3 217** 1 726 894
Road allowance coal	**452**	**12**	—	—	**4**	**11**	**453**
Quarriable mineral	**86** 8 887	**10** 772	— —	— —	**3** 194	**5** 244	**91** 9 415
Salt	**5** 1 146	— —	— —	— —	— —	— —	**5** 1 146
Iron	**2** 3 962	— —	— —	— —	— —	— —	**2** 3 962
Sodium sulphate	**2** 863	— —	— —	— —	— —	— —	**2** 863
Quartz mineral	**28** 122 084	— —	— —	— —	— —	**9** 52 214	**19** 69 870
Placer mineral	**7** 1 302	**3** 1 100	— —	— —	— —	— —	**10** 2 402
Special mineral	**14** 1 333	**2** 1 050	— —	— —	**1** 26	**1** 26	**15** 2 357
Other agreements	**6** 491 157	— —	— —	— —	— —	— —	**6** 491 509
Total	**52 758** 31 238 295	— —	— —	— —	— —	— —	**51 089** 30 955 502

SOURCE: Mineral Resources Division

Chart 1

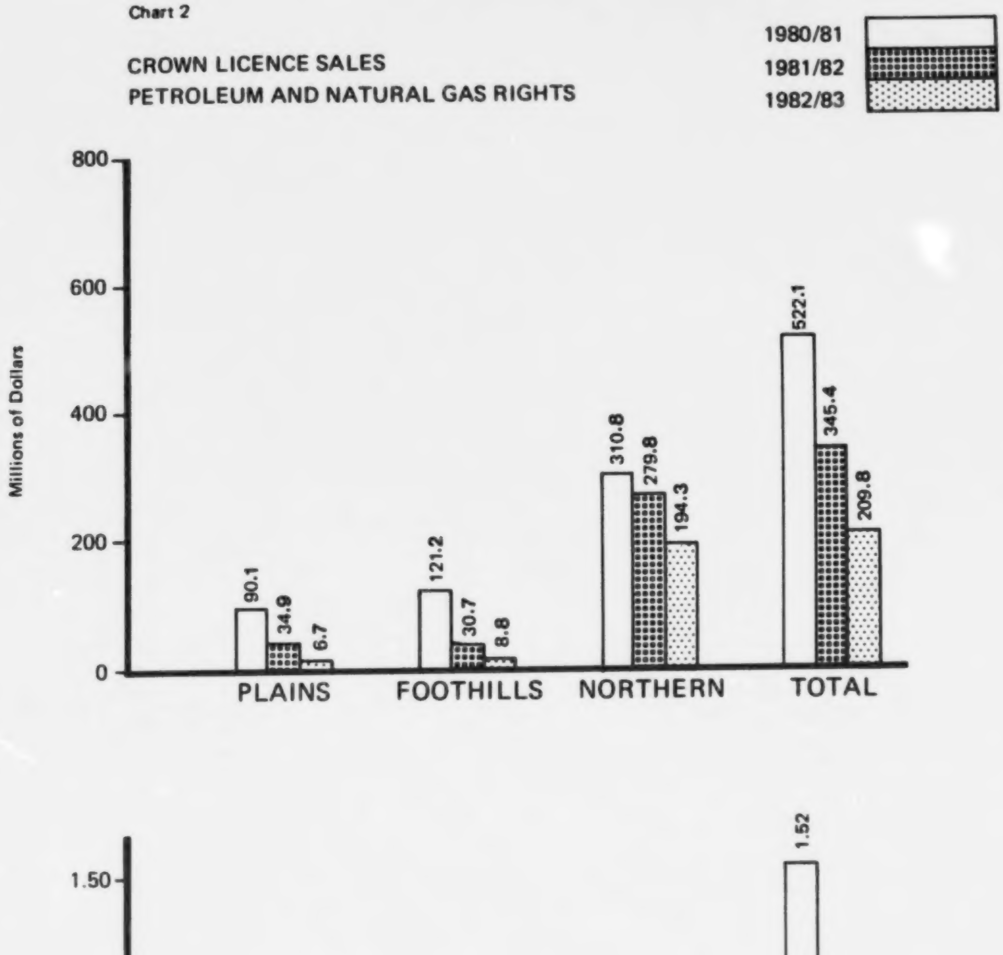
ALL CROWN SALES
PETROLEUM AND NATURAL GAS RIGHTS



Source: Mineral Resources Division

Chart 2

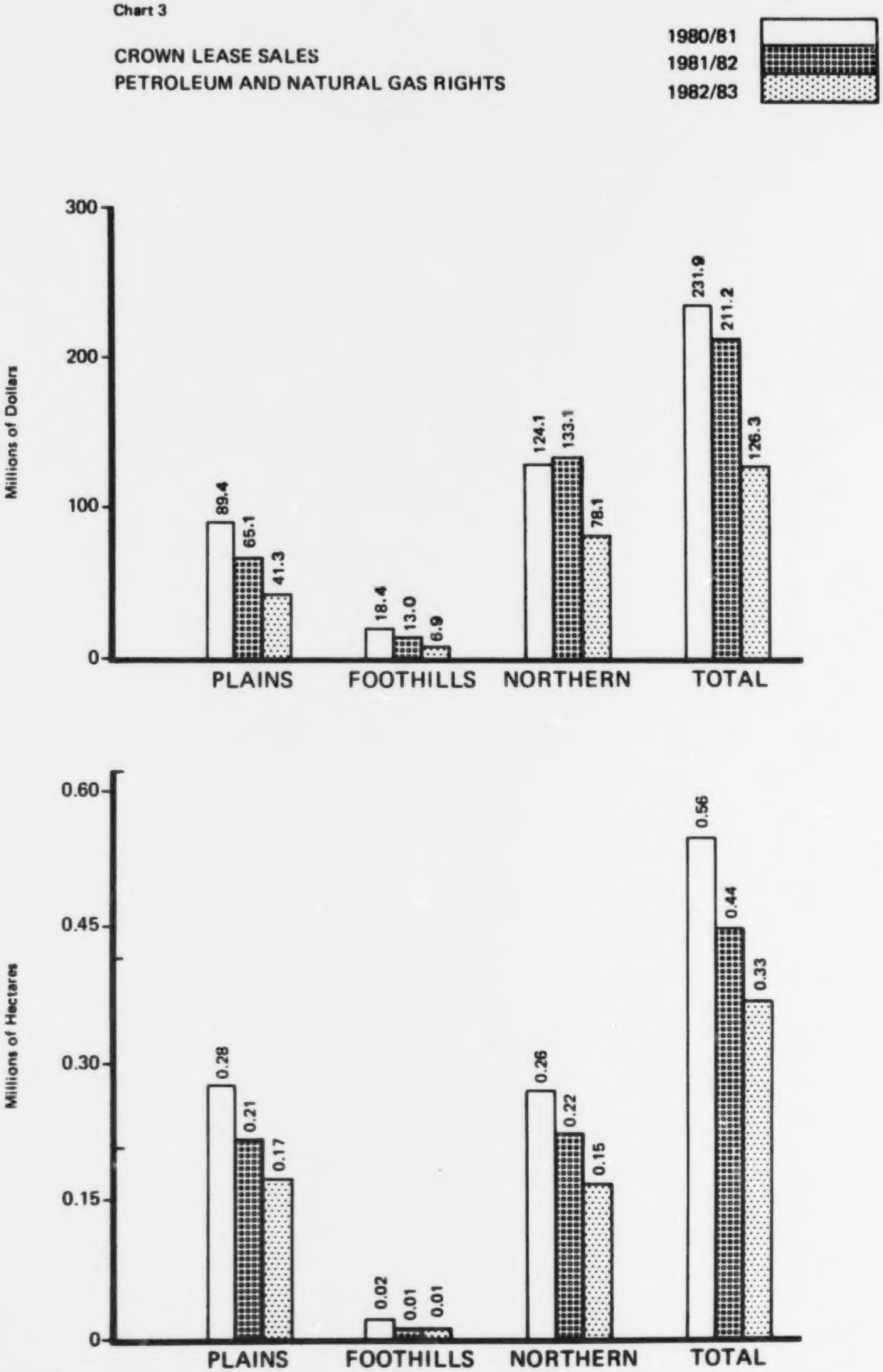
CROWN LICENCE SALES
PETROLEUM AND NATURAL GAS RIGHTS



Source: Mineral Resources Division

Chart 3

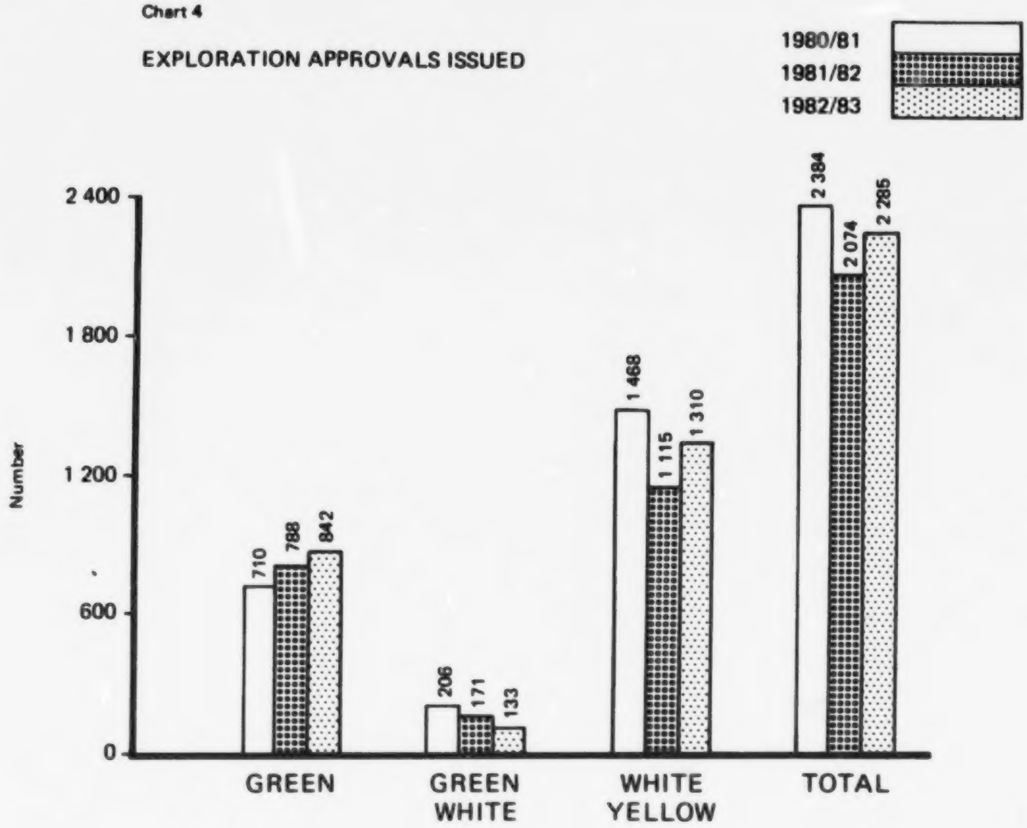
CROWN LEASE SALES
PETROLEUM AND NATURAL GAS RIGHTS



Source: Mineral Resources Division

Chart 4

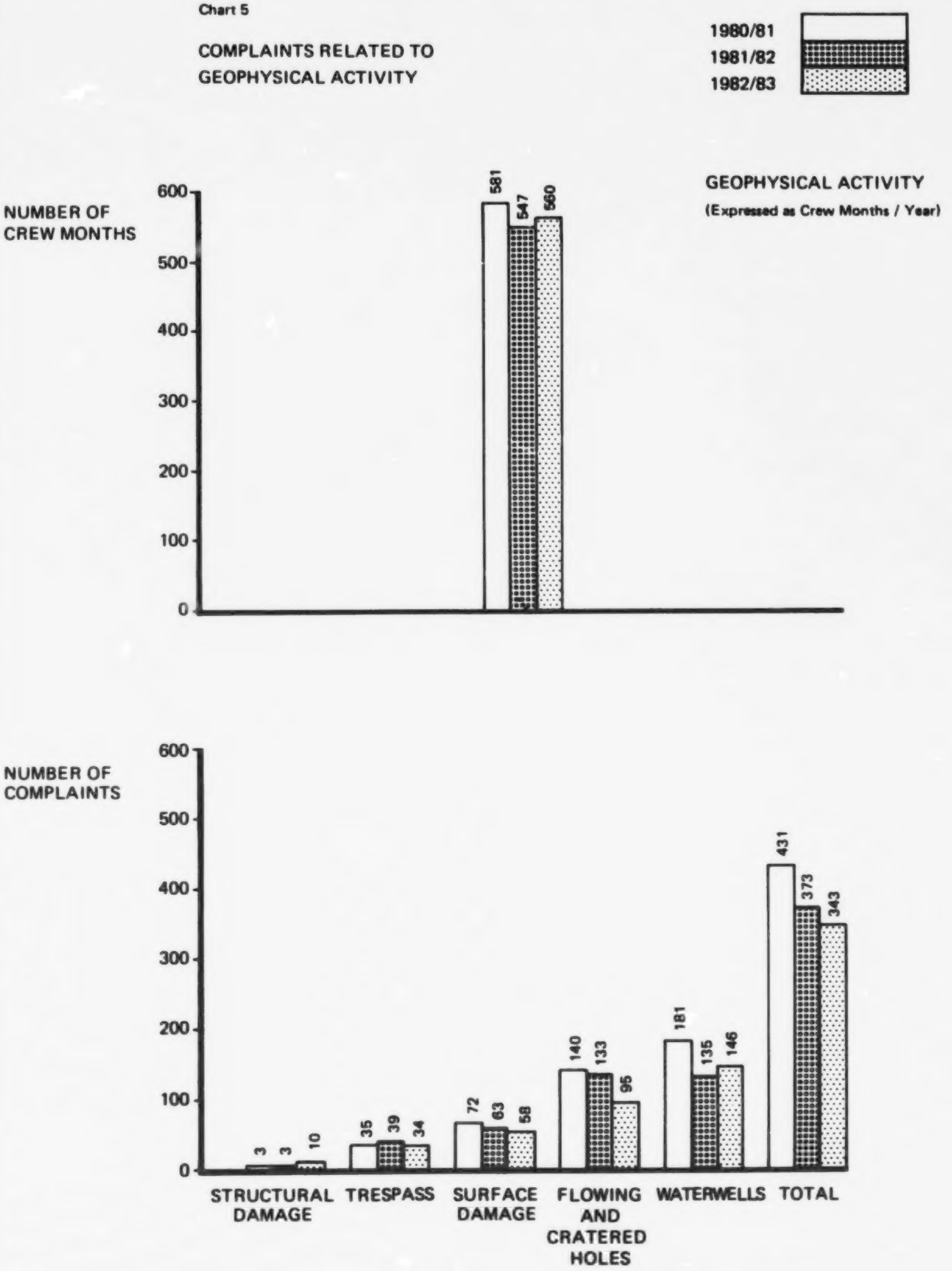
EXPLORATION APPROVALS ISSUED



Source: Mineral Resources Division

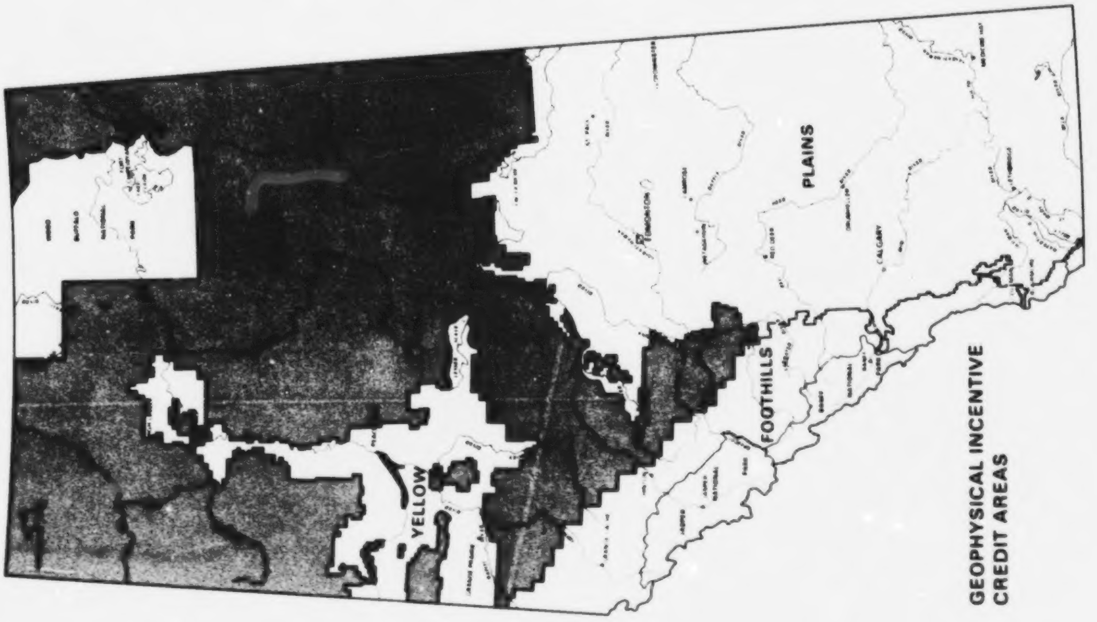
Chart 5

COMPLAINTS RELATED TO GEOPHYSICAL ACTIVITY

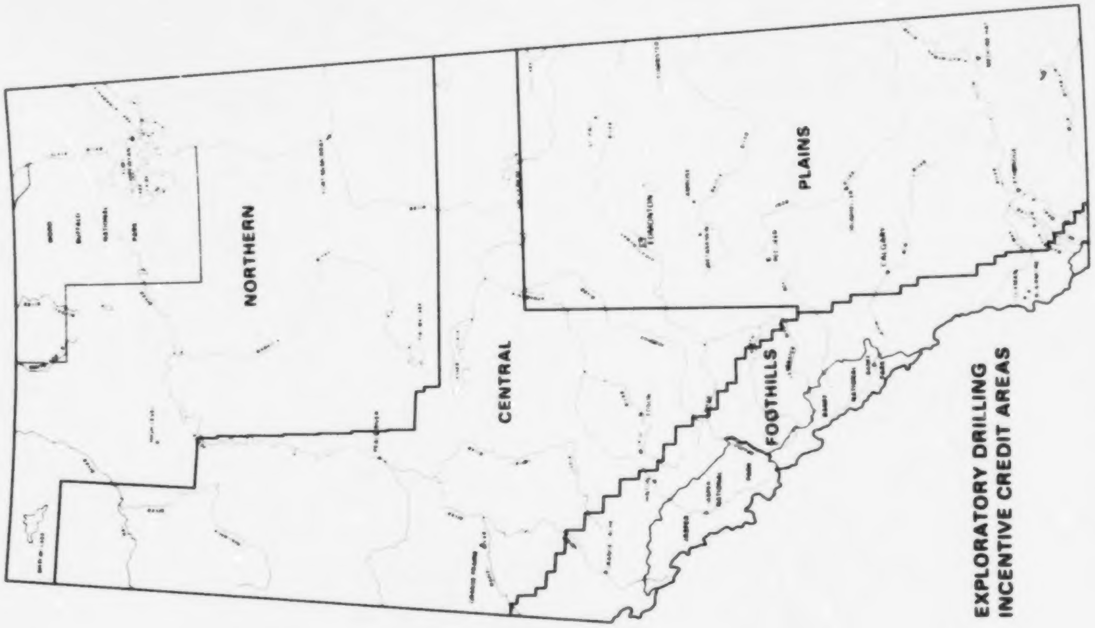


Source: Mineral Resources Division

Map Group 1


YELLOW
FOOTHILLS
PLAINS
WOOD BUFFALO NATIONAL PARK
JASPER NATIONAL PARK
BANFF NATIONAL PARK
EDMONTON
CALGARY

GEOPHYSICAL INCENTIVE CREDIT AREAS


NORTHERN
CENTRAL
FOOTHILLS
PLAINS
WOOD BUFFALO NATIONAL PARK
JASPER NATIONAL PARK
BANFF NATIONAL PARK
EDMONTON
CALGARY

EXPLORATORY DRILLING INCENTIVE CREDIT AREAS

Source: Mineral Resources Division

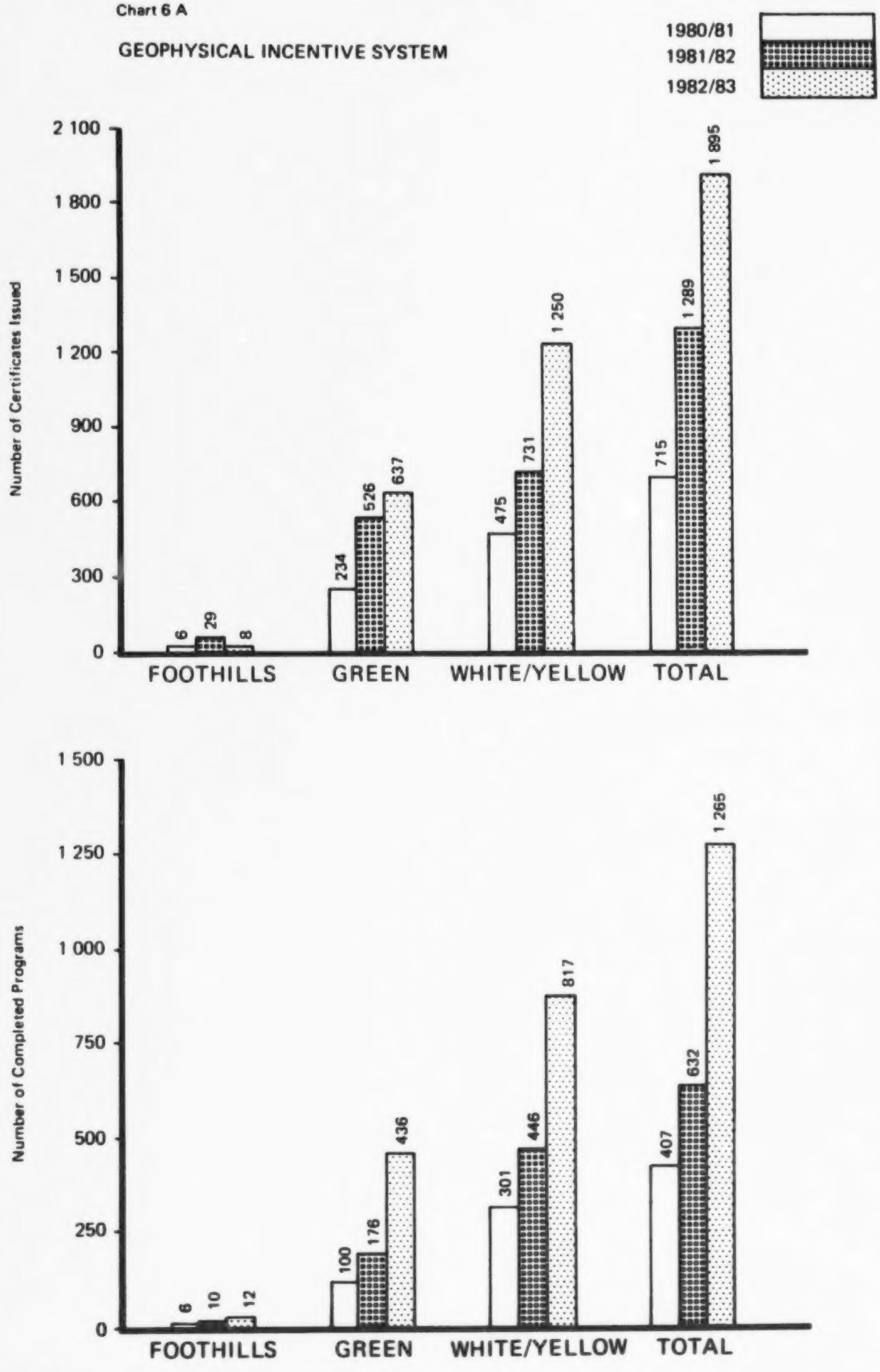


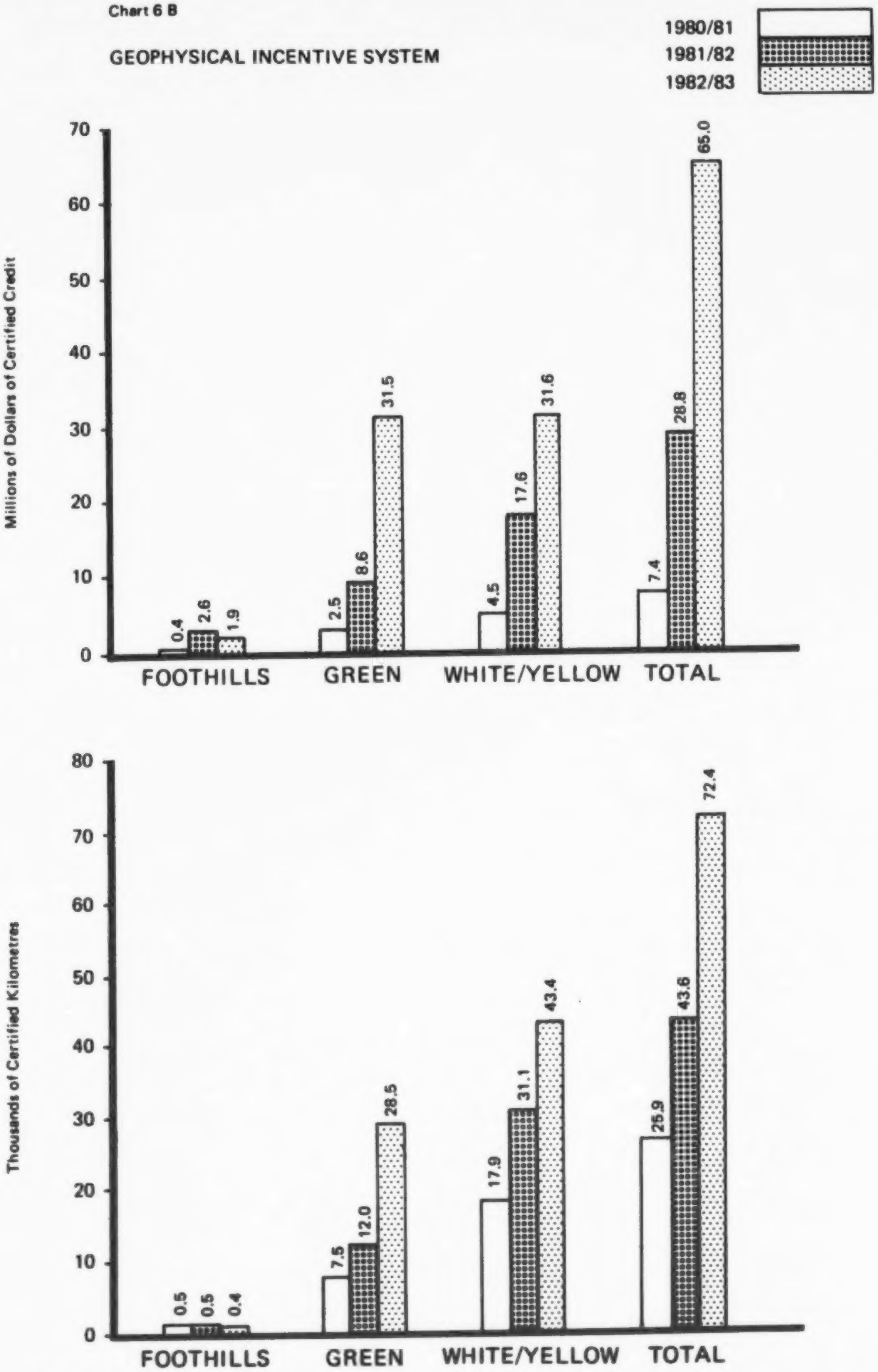
Chart 6 A

GEOPHYSICAL INCENTIVE SYSTEM

Source: Mineral Resources Division

Chart 6 B

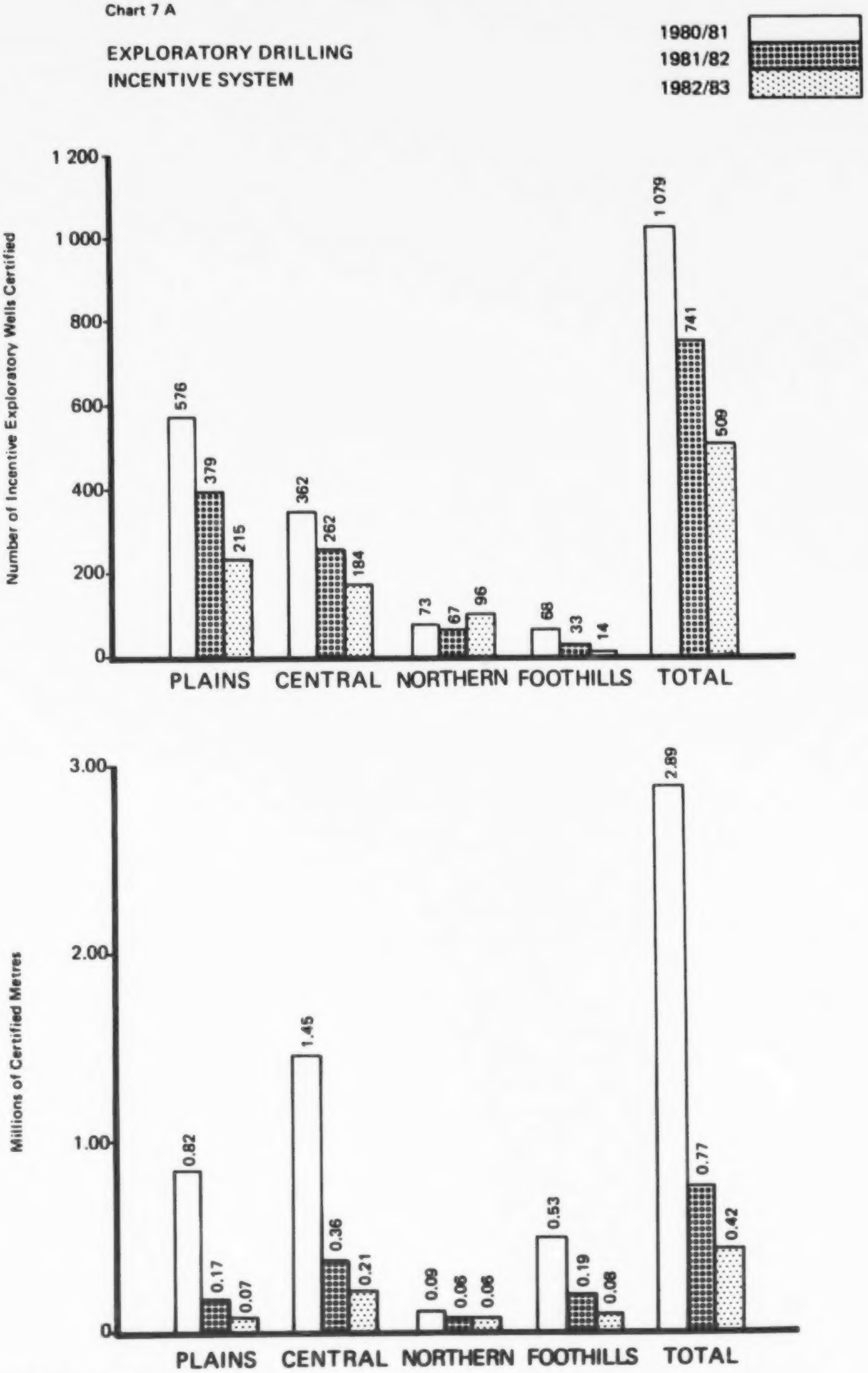
GEOPHYSICAL INCENTIVE SYSTEM



Source: Mineral Resources Division

Chart 7 A

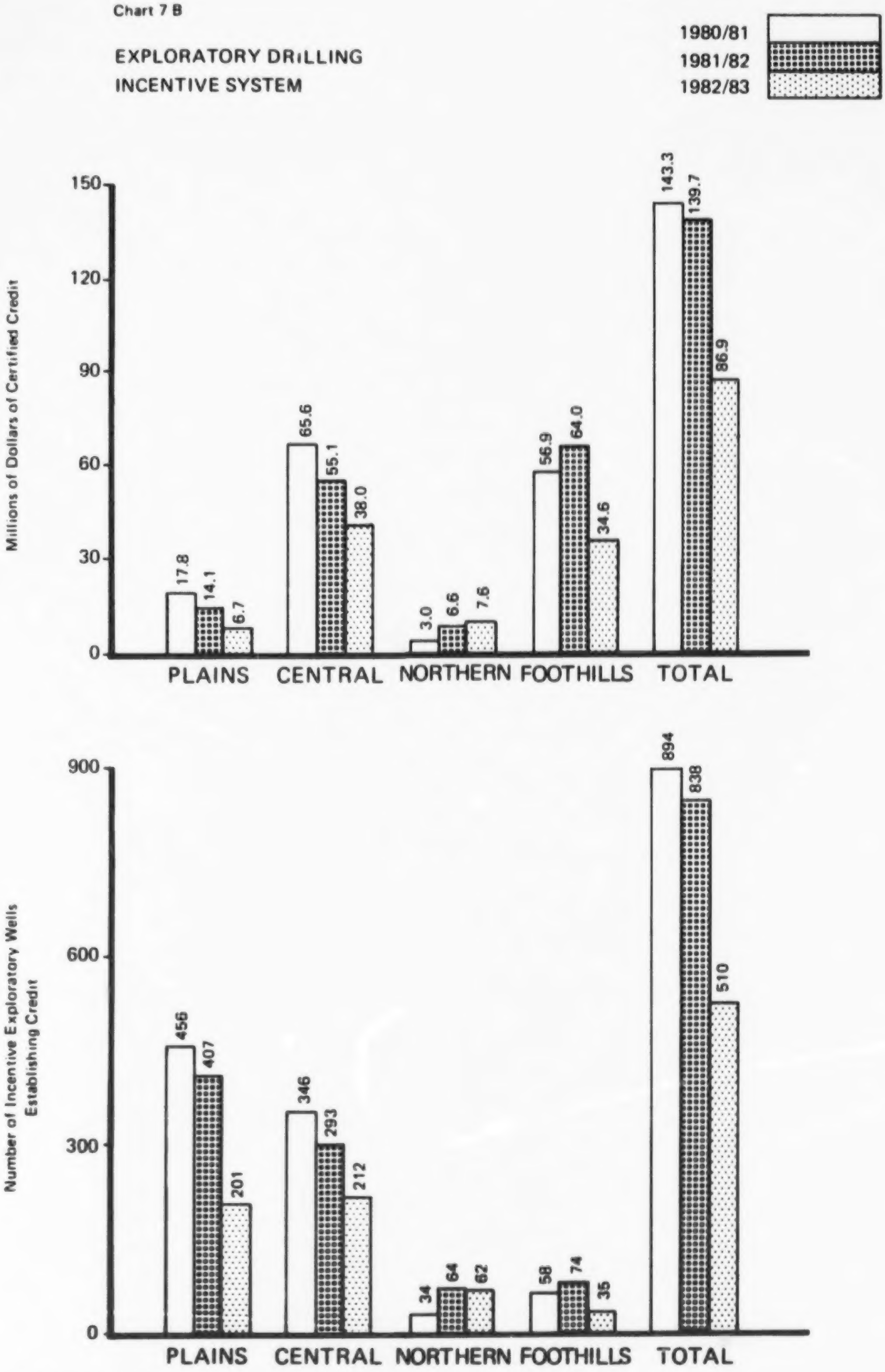
EXPLORATORY DRILLING INCENTIVE SYSTEM



Source: Mineral Resources Division

Chart 7 B

EXPLORATORY DRILLING
INCENTIVE SYSTEM



Source: Mineral Resources Division

Table 3

Wells Drilled
Alberta Oil and Gas Industry

Calendar Year

	1981 number	1982 number
Exploration		
Total wells drilled	2 330	1 769
Successful oil	381	414
Successful gas	1 044	620
Development		
Total wells drilled	3 504	3 353
Successful oil	1 044	1 149
Successful gas	2 012	1 791
Total wells drilled[a]	5 834	5 122

SOURCE: Alberta Energy Resources Conservation Board.

[a] Includes unsuccessful, service and suspended wells but excludes miscellaneous wells drilled.

Table 4

Metres Drilled
Alberta Oil and Gas Industry

Calendar Year

	1981 kilometres	1982 kilometres
Exploratory	3 168	2 300
Development	3 598	3 307
Total	6 766	5 607

SOURCE: Alberta Energy Resources Conservation Board.

Table 5

Remaining Established Reserves

Calendar Year

	1981	1982	Percentage Change
Conventional crude oil	696.0 10^6m^3	649.4 10^6m^3	(6.7)
Synthetic crude oil	3 860.0 10^6m^3	3 900.0 10^6m^3	1.0
Pentanes plus[a]	127.4 10^6m^3	119.1 10^6m^3	(6.5)
Marketable gas	1 795.3 10^9m^3	1 853.1 10^6m^3	3.2
Propane	123.4 10^6m^3	128.1 10^6m^3	3.8
Butanes	70.4 10^6m^3	73.0 10^6m^3	3.7
Sulphur[b]	119.3 10^6t	88.1 10^6t	(26.2)
Coal	14.7 10^9t	16.5 10^9t	12.2

SOURCE: Alberta Energy Resources Conservation Board.

Note: Abbreviations used: 10^6 = million; 10^9 = billion; 10^{12} = trillion;
m^3 = cubic metres; t = tonnes.

[a] A mixture mainly of pentanes and heavier hydrocarbons, which ordinarily may contain some butanes and which is obtained from the processing of raw gas, crude oil or condensate.

[b] From natural gas processing plants.

Table 6

Alberta Liquids Production

Calendar Year

	1981	1982	Percentage Change
	thousand cubic metres/day	thousand cubic metres/day	
Conventional crude oil	156.1	149.9	(4.5)
Experimental crude oil	2.1	3.5	6.6
Synthetic crude oil	17.7	19.1	7.9
Pentanes plus[a] (includes condensate)	15.7	15.4	(1.9)
Subtotal crude and equivalent	191.6	187.0	(2.4)
Propane	15.1	15.1	0.0
Butanes	9.2	9.1	(1.1)
Total liquids	215.9	211.2	(2.2)

SOURCE: Alberta Energy Resources Conservation Board

[a] A mixture mainly of pentanes and heavier hydrocarbons, which ordinarily may contain some butanes and which is obtained from the processing of raw gas, crude oil or condensate.

Table 7

Production and Disposition of Crude Oil and Pentanes Plus[a]

Calendar Year

	1981	1982	Percentage Change
	thousand cubic metres/day	thousand cubic metres/day	
Production	191.6	187.0	(2.4)
Disposition			
Alberta	42.6	38.5	(9.6)
Canada excluding Alberta:			
British Columbia	20.4	18.6	(8.8)
Saskatchewan and Manitoba	9.5	9.7	(2.1)
Ontario	68.8	58.5	(15.0)
Quebec and Atlantic Provinces	30.6	36.1	18.0
Subtotal Canada excluding Alberta	129.3	123.0	(4.9)
U.S.A.	19.8	24.4	23.2
Total disposition[b]	191.9	186.0	(3.1)

SOURCE: Alberta Energy Resources Conservation Board

[a] Pentanes plus is a mixture of pentanes and heavier hydrocarbons which ordinarily may contain some butanes and which is obtained from the processing of raw gas, crude oil or condensate.

[b] Includes losses and adjustments in interprovincial pipelines.

Table 8

Production and Disposition of Marketable Natural Gas

Calendar Year

	1981	1982	Percentage Change
	millions of cubic metres	millions of cubic metres	
Production	61 950.2	64 112.8	3.5
Disposition			
Alberta	13 361.8	14 069.1	5.3
Canada excluding Alberta:			
British Columbia	224.6	184.1	(18.0)
Saskatchewan and Manitoba	3 359.5	3 525.9	5.0
Ontario	19 009.2	18 660.6	(1.8)
Quebec	3 143.3	2 962.2	(5.8)
Subtotal Canada excluding Alberta	25 736.6	25 332.8	(1.6)
U.S.A.	18 433.8	19 937.0	8.2
Total disposition[a]	59 285.6	60 831.0	2.6

SOURCE: Alberta Energy Resources Conservation Board

[a] Includes line fuel losses and metering differences in interprovincial pipelines.

Table 9

Production of Marketable Coal

Calendar Year

	1981	1982	Percentage Change
	thousand tonnes	thousand tonnes	
Bituminous	6 825	6 799	(.4)
Subbituminous	11 545	13 010	12.7
Total	18 370	19 809	7.8

SOURCE: Alberta Energy Resources Conservation Board

Table 10

Deliveries of Marketable Coal

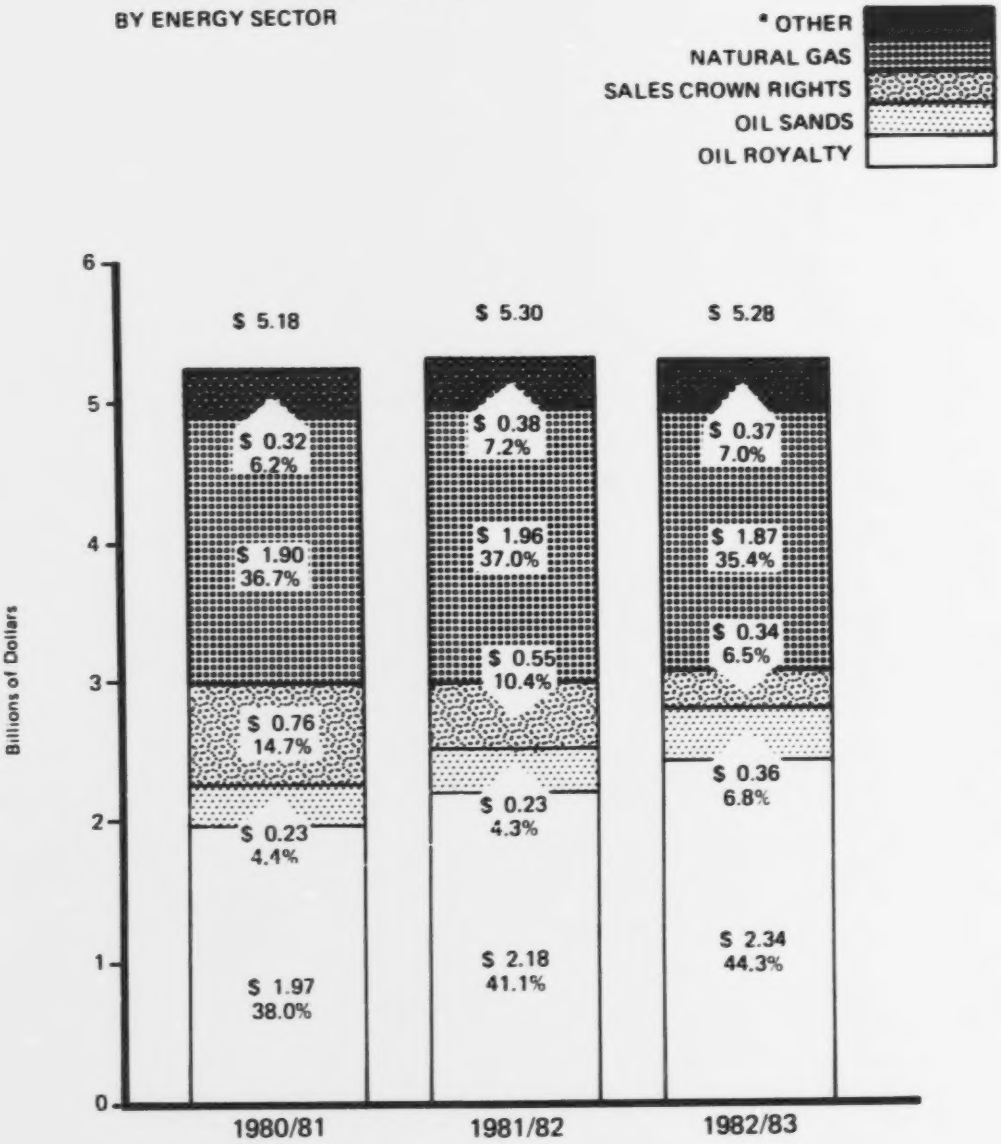
Calendar Year

	1981	1982	Percentage Change
	thousand tonnes	thousand tonnes	
Alberta	11 687	13 274	13.6
Canada excluding Alberta	1 957	1 534	(21.6)
Export	4 139	5 012	21.1
Total	17 783	19 820	11.5

SOURCE: Alberta Energy Resources Conservation Board

Chart 8

COMPARATIVE GROSS REVENUE BY ENERGY SECTOR



*OTHER

	1980/81	1981/82	1982/83
Coal and Other Royalties	0.01	0.01	0.02
Rental and Fees	0.09	0.10	0.10
Freehold Mineral Tax	0.15	0.14	0.15
Crude Oil Export Charge	0.07	0.13	0.10
	$ 0.32	$ 0.38	$ 0.37

Source: Mineral Revenue Division

Chart 9

FREEHOLD MINERAL TAX REVENUES
1980/81 TO 1982/83

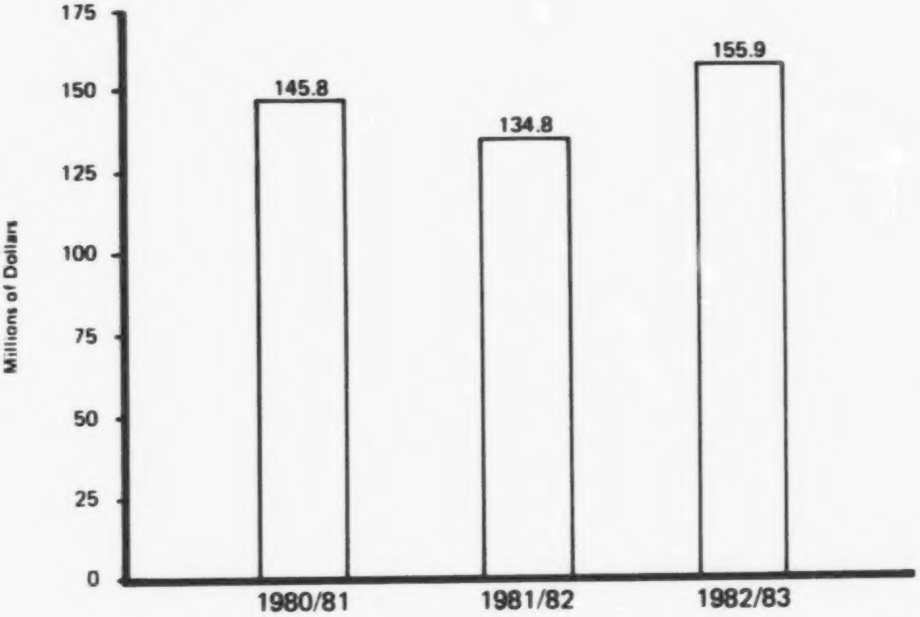
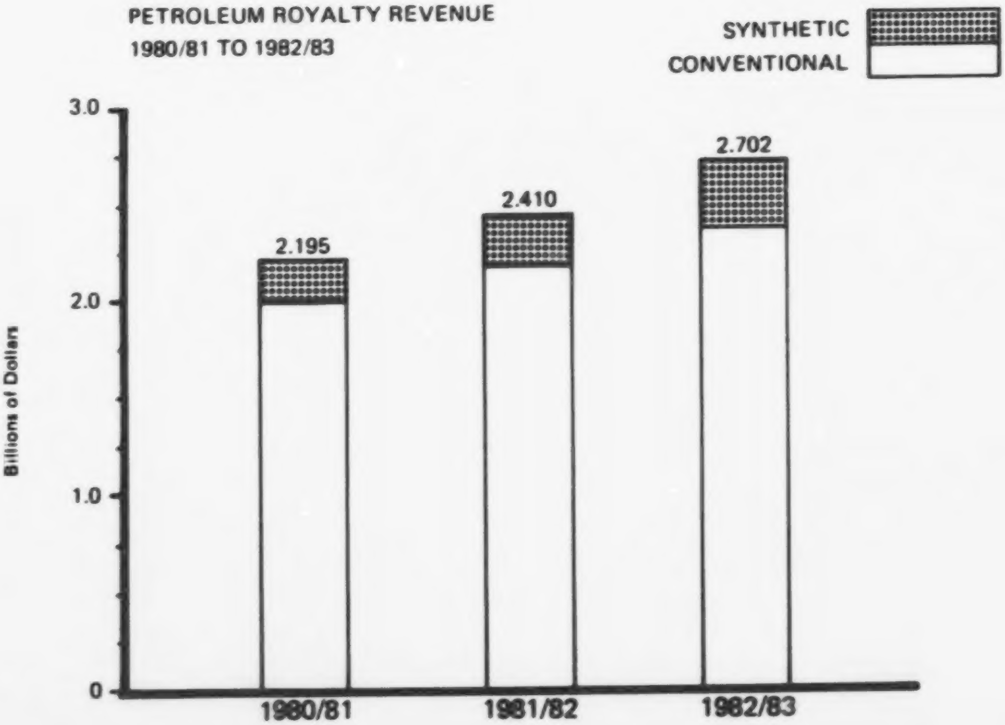


Chart 10

PETROLEUM ROYALTY REVENUE
1980/81 TO 1982/83



Source: Mineral Revenues Division

Chart 11

PETROLEUM ROYALTY INCENTIVES
1980/81 TO 1982/83

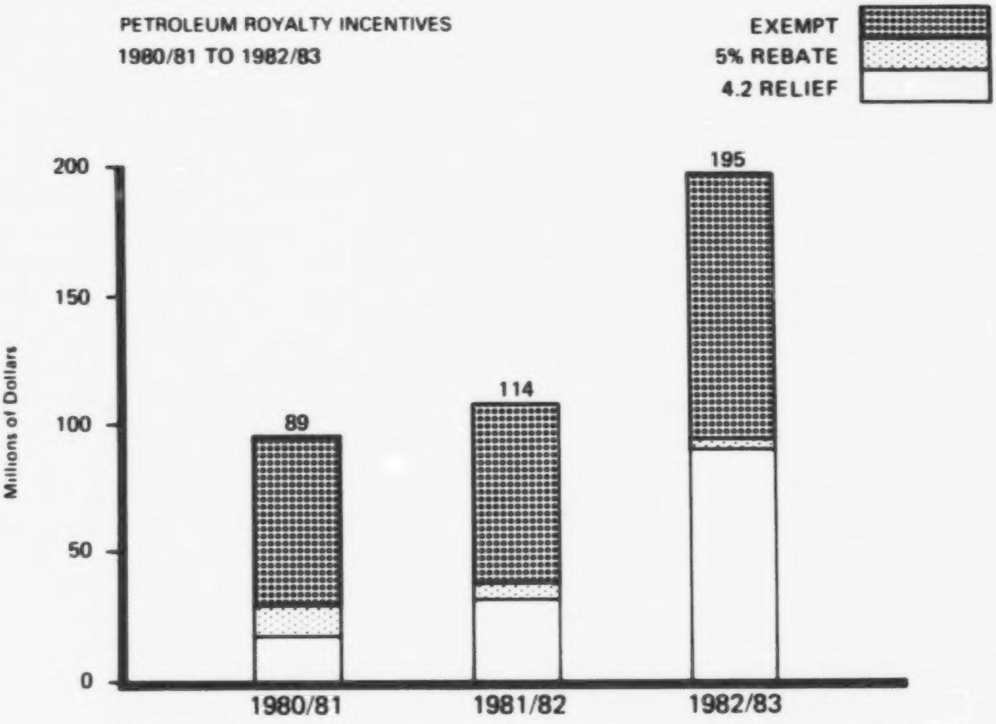
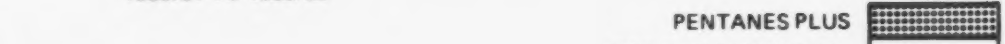


Chart 12

NATURAL GAS AND ASSOCIATED BYPRODUCTS ROYALTIES
1980/81 TO 1982/83



Source: Mineral Revenues Division

Chart 13

COAL ROYALTY
1980/81 TO 1982/83

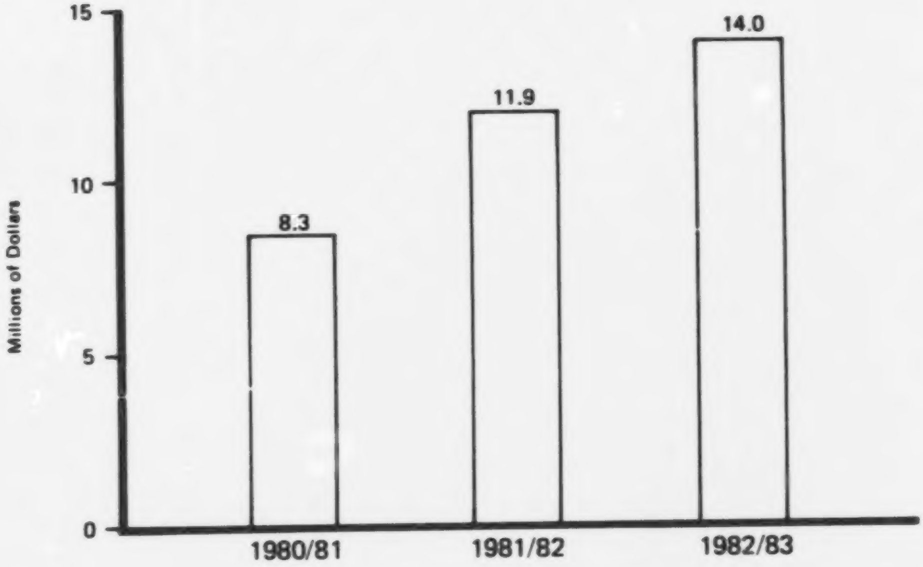
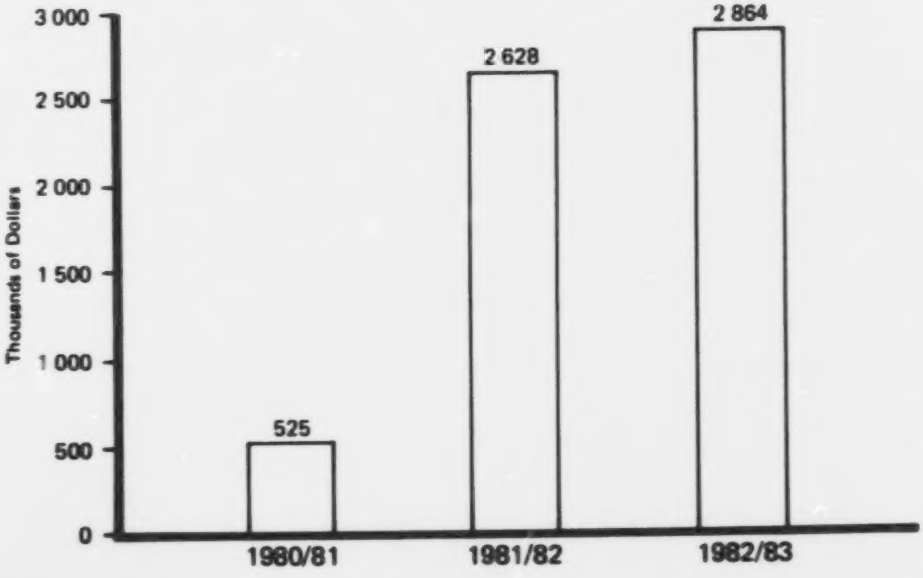


Chart 14

QUARRYING AND OTHER ROYALTIES
1980/81 TO 1982/83



Source: Mineral Revenues Division

Table 11

Mapping Branch Production Statistics

	1981/82	1982/83
1:1 000 Series		
Number of manuscripts completed	1 220	1 237
Number of maps completed (manual)	6	—
Number of maps completed (digital)	236	669
Number of maps for which co-ordinates computed	188	58
1:5 000 Series		
Number of cadastral maps completed	13	18
Number of orthophoto-line maps completed	27	32
1:20 000 Series		
Number of maps completed	57	63
1:250 000 Series		
Number of maps completed	18	78
1:750 000 Series		
Number of maps completed	205	195
1:1 500 000 Series		
Number of maps completed	4	21
1:2 000 000 Series		
Number of maps completed	16	25
1:5 000 000 Series		
Number of maps completed	57	100
Thematic Mapping Services		
Number of bases supplied	—	1 093
Number of graphs, charts and forms completed	—	60

SOURCE: Bureau of Surveying and Mapping

Table 12

Area Acquired by Foreigners

By Month

	1978/79	1979/80	1980/81	1981/82	1982/83
	Hectares	Hectares	Hectares	Hectares	Hectares
April	64	81	152	598	351
May	464	88	21	514	201
June	242	24	423	1 010	284
July	64	338	121	410	88
August	64	276	772	509	162
September	131	299	486	415	816
October	187	12	236	306	160
November	81	17	77	1 117	138
December	6	164	81	1 345	27
January	576	266	31	417	66
February	325	391	151	22	22
March	64	617	424	148	10
Total	2 268	2 573	2 975	6 811	2 325*

SOURCE: Foreign Ownership of Land Administration.

NOTE: Foreigners include ineligible persons and foreign-controlled corporations as both are defined in the Foreign Ownership of Land Regulations.

* Of this figure 1 077 hectares were for estate settlement, 16 hectares under order-in-council, 62 hectares for parcels under eight hectares, 125 hectares acquired under Order for Foreclosure, 627 hectares were for industrial and resource development, 418 hectares because of agreements entered into prior to April 26, 1977.

Table 13

Area Acquired by Foreigners
Percentage of Total Rural Sales

	Foreign Sales	Total Rural Sales*	Percentage
	Hectares	Hectares	
1978/79	2 268	1 227 996	0.2
1979/80	2 573	1 251 936	0.2
1980/81	2 975	1 150 787	0.2
1981/82	6 811	1 184 323	0.5
1982/83	2 325	885 013	0.3

SOURCE: Foreign Ownership of Land Administration.

NOTE: Foreigners include ineligible persons and foreign controlled corporations as both are defined in the Foreign Ownership of Land Regulations.

* Total Rural Sales include transfers only, whereas foreign sales include caveats for agreement for sale, options etc.

Table 14

Area Acquired by Foreigners
by Soil Class

1982/83

Soil Class	Hectares
1	67
2	566
3	663
4	662
5	218
6	146
7	2
Organic	1
Total	2 325

SOURCE: Foreign Ownership of Land Administration.

Table 15

Area Acquired by Foreigners by Country

1982/83

Country	Hectares
United States	1 971
Germany	10
England	66
Holland	130
Belgium	128
Bermuda	1
Hong Kong	17
Australia	2
Total	2 325

SOURCE: Foreign Ownership of Land Administration.

Table 16

Area Acquired by Foreigners by Municipality

1982/83

	Hectares
County	
1 Grande Prairie	19
4 Newell	2
6 Stettler	1
10 Wetaskiwin	3
12 Athasbasca	44
13 Smoky Lake	129
14 Lacombe	1
16 Wheatland	128
17 Mountainview	43
19 St. Paul	11
20 Strathcona	21
24 Vermilion	70
25 Leduc	21
27 Minburn	16
30 Lamont	195
31 Parkland	25
Subtotal	729
Special Areas	
2 Hanna	194
Subtotal	194

	Hectares
Improvement Districts	
8	1
14	4
16	2
17	1
20	127
Subtotal	135
Municipal Districts	
9 Pincher Creek	1
26 Willow Creek	150
31 Foothills	272
44 Rocky View	141
52 Provost	257
87 Bonnyville	1
90 Sturgeon	186
130 Smoky River	2
136 Fairview	257
Subtotal	1 267
Total	2 325

SOURCE: Foreign Ownership of Land Administration

Table 17

Assurance Fund Values for Foreign Purchases

1982/83

Month	Value of Total Rural Sales $	Value of Foreign Sales $	Percentage
April	97 279 157	909 841	0.93
May	121 079 216	3 419 919	2.82
June	101 392 164	2 427 581	0.23
July	78 724 661	1 253 855	1.59
August	78 490 970	737 501	0.93
September	59 501 908	1 367 504	2.29
October	53 267 830	2 278 031	4.27
November	67 518 729	19 870	0.02
December	85 242 567	104 123	0.12
January	92 079 173	3 024 005	3.28
February	85 249 898	1 821 837	2.13
March	112 737 917	815 254	0.72
Total	1 032 564 190	18 179 321	1.76

SOURCE: Foreign Ownership of Land Administration.

Table 18

Area Acquired by Permanent Residents

1982/83

Country	Hectares	Value $
United States	4 412	10 386 713
Germany	2 382	6 175 349
Holland	2 369	9 219 700
England	1 343	6 788 080
Switzerland	1 235	2 985 122
Scotland	347	469 190
Sweden	331	469 250
Australia	309	702 000
Ireland	292	682 000
Poland	208	461 400
Denmark	134	285 311
Iran	129	60 000
Greece	128	180 000
Norway	128	200 000
Trinidad	67	62 000
Australia	66	103 765
Columbia	65	40 000
Yugoslavia	65	110 000
Italy	63	565 000
India	42	463 833
Wales	35	350 000
Kenya	13	136 000
New Zealand	12	18 500
Japan	10	230 000
South Africa	10	327 500
Fiji	6	131 166
Czechoslovakia	5	39 500
Hungary	2	19 000
Mexico	1	13 500
China	1	15 000
Uganda	1	82 000
Pakistan	1	120 000
Barbados	1	10 000
Guyana	1	10 000
France	1	20 000
Belgium	1	15 000
Other Countries	1	11 000
Total	14 217	41 956 879

SOURCE: Foreign Ownership of Land Administration.

Table 19

Total Number of Land Agents Licences Issued

Month	Fiscal Year					Interim Licences
	78/79	79/80	80/81	81/82	82/83	82/83
April	22	33	55	40	10	
May	36	38	32	43	5	2
June	33	22	68	39		4
July	30	26	19	22		5
August	25	25	32	25		3
September	20	23	37	34		6
October	15	25	55	32		3
November	23	26	13	31		10
December	19	28	13	41		1
January	24	34	23	12		5
February	70	30	21	39		3
March	19	22	35	32		4
Total Newly Issued	336	332	403	390	15	46
Renewed	440	174	142	517	376	Nil
Cancelled or Expired	671	320	232	324	1 810	Nil
Active	1 749	1 935	2 248	2 831	1 412	46

NOTE: Effective 21, April 1982 with the passing of the Land Agents Licencing Regulations a new system of issuing licences commenced e.g., an interim licence would be issued for all new land agents.

SOURCE: Foreign Ownership of Land Administration.

Table 20

Photogrammetric Services Section

	1981/82	1982/83
Aerial Photography	194	268
Number of projects completed		
Area Covered		
Department	nil	372 km^2
Contract	310 052 km^2	200 028 km^2
Total	310 052 km^2	200 400 km^2
Line Distance Flown		
Department	nil	578
Contract	91 511 km	110 750 km
Total	91 511 km	111 328 km
Number of photographs taken	26 273	33 186
Topographic Mapping		
Number of projects completed	34	33
Area mapped	10 920 km^2	15 000
Stereomodels mapped	508	598
Photogrammetric Map Control (Aerial triangulation)		
Phase III Forest Inventory	87 482 km^2	16 670
Base Mapping	24 700 km^2	89 060
Total	112 182 km^2	105 730 km^2
Mosaic Construction		
Number projects completed	46	57
Area covered	36 623 km^2	10 727 km^2
Area Measurement	14 300 km^2	208 000 km^2

SOURCE: Resource Evaluation and Planning Division

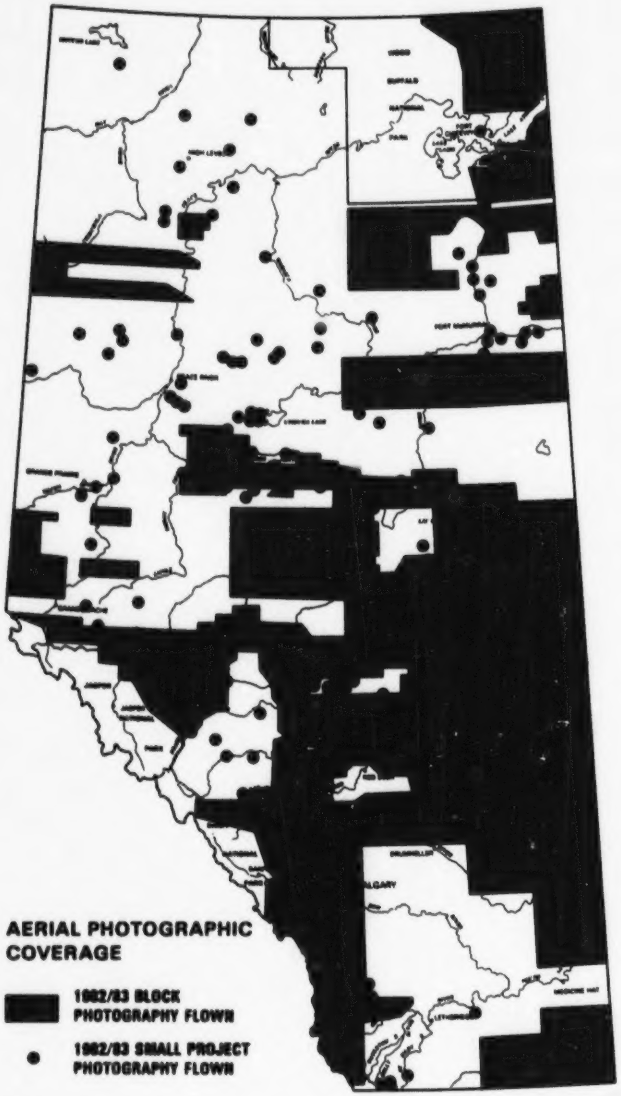
Table 21

Map and Air Photo Reproduction Section

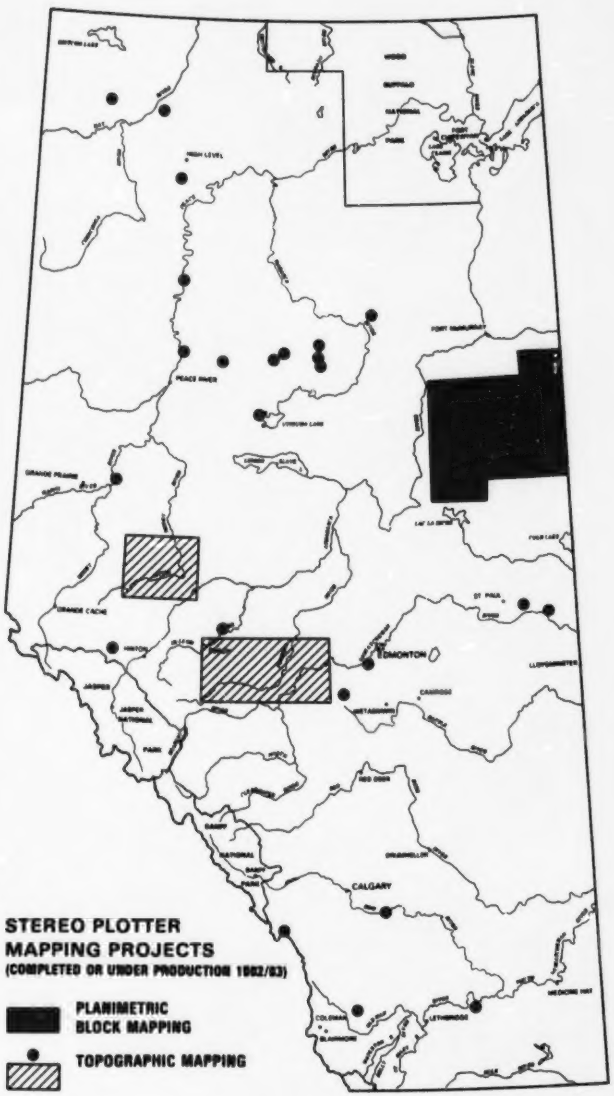
Product	1981/82	1982/83
Contact print (25.4 × 25.4 cm)	395 361	403 054
Enlargements (all sizes)	6 399	8 344
Diapositives (25 × 25 cm)	6 101	4 349
Itek prints (all sizes)	56 883	42 117
Aerial film processing (all sizes)	795 m	1 087 m
Graphics reproduction	8 049 m^2	10 755 m^2
Diazo reproduction	115 156 m^2	134 725 m^2
Micro reduction (30m rolls)	99	63
Micro duplication (30m rolls)	443	218

SOURCE: Resource Evaluation and Planning Division

Map Group 2


AERIAL PHOTOGRAPHIC COVERAGE

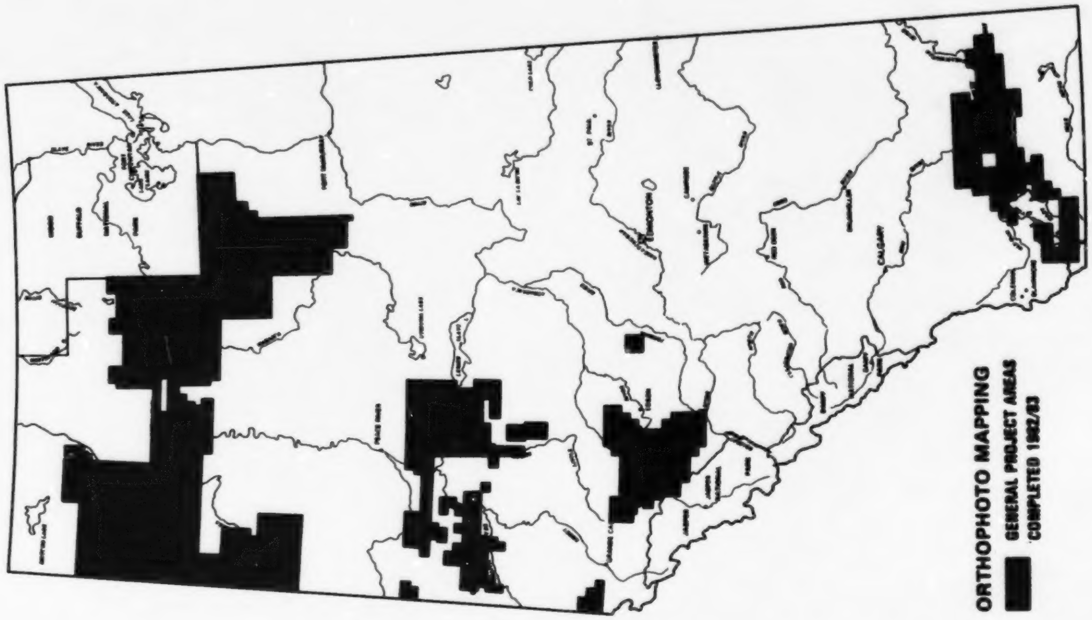
■ 1982/83 BLOCK PHOTOGRAPHY FLOWN
● 1982/83 SMALL PROJECT PHOTOGRAPHY FLOWN
HIGH LEVEL
PEACE RIVER
GRANDE PRAIRIE
JASPER
CALGARY
LETHBRIDGE
MEDICINE HAT
FORT McMURRAY
WOOD BUFFALO NATIONAL PARK

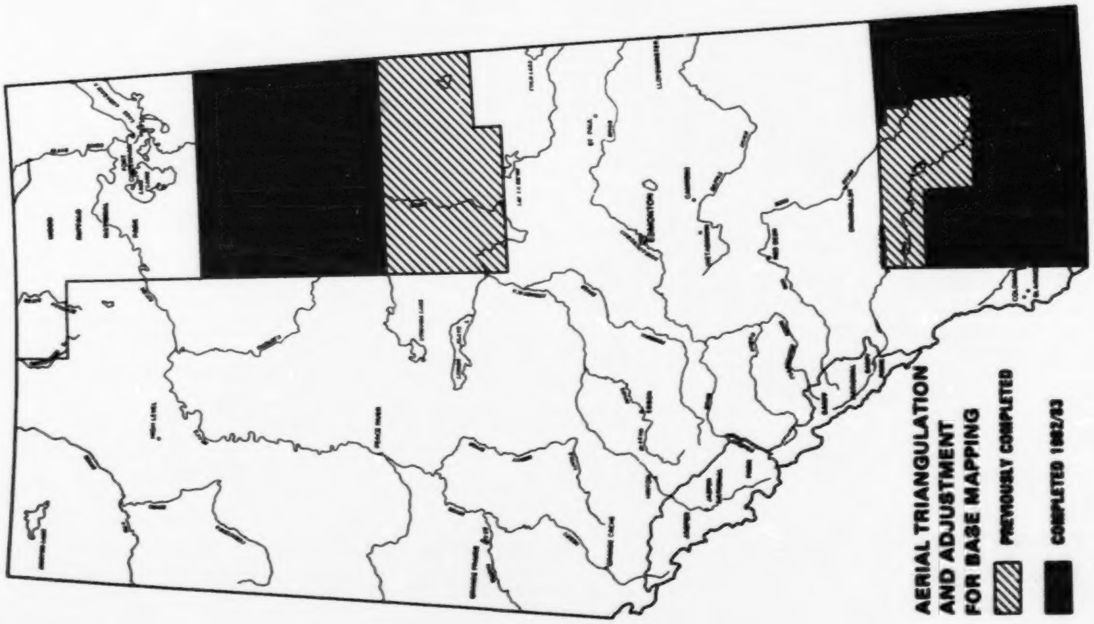

STEREO PLOTTER MAPPING PROJECTS
(COMPLETED OR UNDER PRODUCTION 1982/83)

■ PLANIMETRIC BLOCK MAPPING
● TOPOGRAPHIC MAPPING
▨
HIGH LEVEL
PEACE RIVER
GRANDE PRAIRIE
GRANDE CACHE
HINTON
JASPER NATIONAL PARK
EDMONTON
CAMROSE
ST. PAUL
LLOYDMINSTER
RED DEER
DRUMHELLER
CALGARY
LETHBRIDGE
MEDICINE HAT
FORT McMURRAY
WOOD BUFFALO NATIONAL PARK

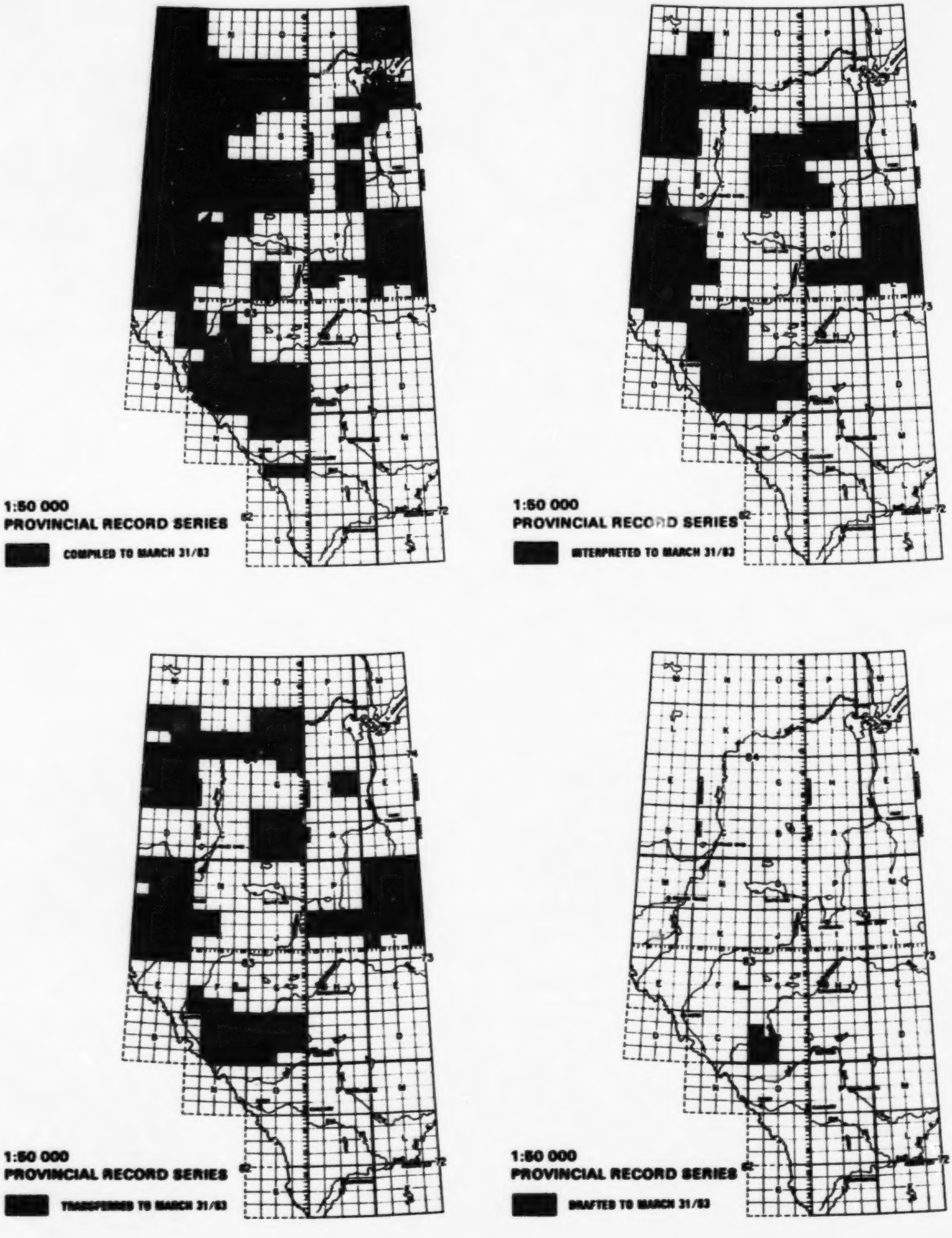
Source: Resource Evaluation and Planning Division

Map Group 3


ORTHOPHOTO MAPPING
■ GENERAL PROJECT AREAS COMPLETED 1982/83
PEACE RIVER
EDMONTON
CALGARY
RED DEER

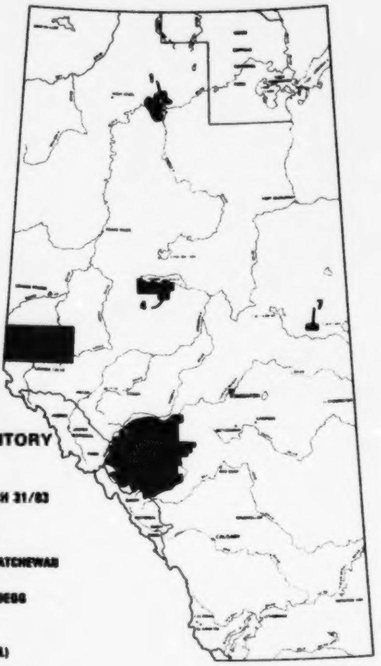

AERIAL TRIANGULATION AND ADJUSTMENT FOR BASE MAPPING
▨ PREVIOUSLY COMPLETED
■ COMPLETED 1982/83
HIGH LEVEL
PEACE RIVER
GRANDE PRAIRIE
EDMONTON
RED DEER
ST. PAUL
LLOYDMINSTER

Map Group 4


1:50 000
PROVINCIAL RECORD SERIES
▇ COMPILED TO MARCH 31/83
1:50 000
PROVINCIAL RECORD SERIES
▇ INTERPRETED TO MARCH 31/83
1:50 000
PROVINCIAL RECORD SERIES
▇ TRANSFERRED TO MARCH 31/83
1:50 000
PROVINCIAL RECORD SERIES
▇ DRAFTED TO MARCH 31/83

Source: Resource Evaluation and Planning Division

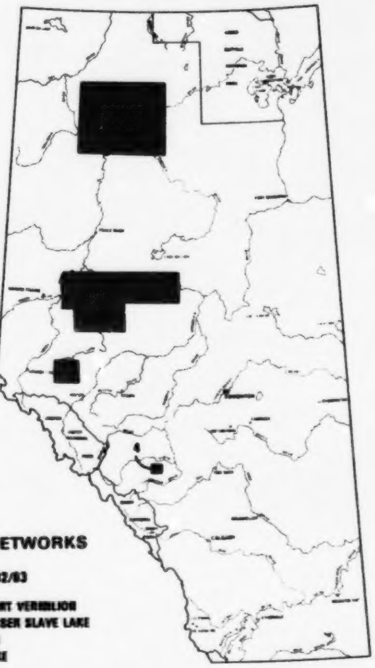
Map Group 5



FORAGE INVENTORY PROGRAM

COMPLETED TO MARCH 31/83

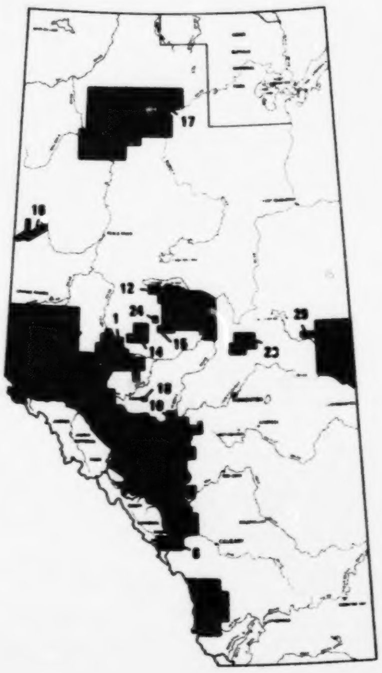
1. JEAN D'OR PRAIRIE
2. PEMBINA-BRAZEAU
3. ROCKY-NORTH SASKATCHEWAN
4. FROST HILLS
5. CHUNGO-CLINE-NORDEGG
6. RAM-CLEARWATER
7. LAKELAND
8. GRANDE PRAIRIE (83L)



CLIMATIC NETWORKS

OPERATED IN 1982/83

1. HIGH LEVEL-FORT VERMILION
2. STURGEON-LESSER SLAVE LAKE
3. MUSKEG RIVER
4. LANDSLIDE LAKE



PHYSICAL LAND CLASSIFICATION

COMPLETED BEFORE 1982/83

1. IOSEGUN LAKE
2. ROCKY MTN.HOUSE GRAZING RESERVE
3. COLD LAKE
4. GHOST RIVER
5. LIVINGSTONE-PORCUPINE
6. CANMORE CORRIDOR
7. GRANDE CACHE-KAKWA-WILLMORE
8. BRAZEAU-PEMBINA
9. BERLAND
10. PEMBINA GRAZING RESERVE
11. CACHE PERCOTTE
12. FROST HILLS
13. ROCKY-NORTH SASKATCHEWAN II
14. W4 MANAGEMENT UNIT (TS)
15. SWARTZ LAKE
16. PEACE RIVER SLOPES
17. JEAN D'OR PRAIRIE
18. SANG LAKE GRAZING RESERVE
19. CARCAJOU
20. LINTON LAKE
21. LOWER PEACE
22. SWAN HILLS TOWNSITE
23. ROCHESTER
24. S1 MANAGEMENT UNIT (TS)

COMPLETED IN 1982/83

25. CHUNGO-CLINE-NORDEGG
26. DEEP BASIN 83 L S 1/2 (TS)
27. RAM-CLEARWATER
28. CLEARWATER GRAZING RESERVE
29. SPECIAL LAKELAND

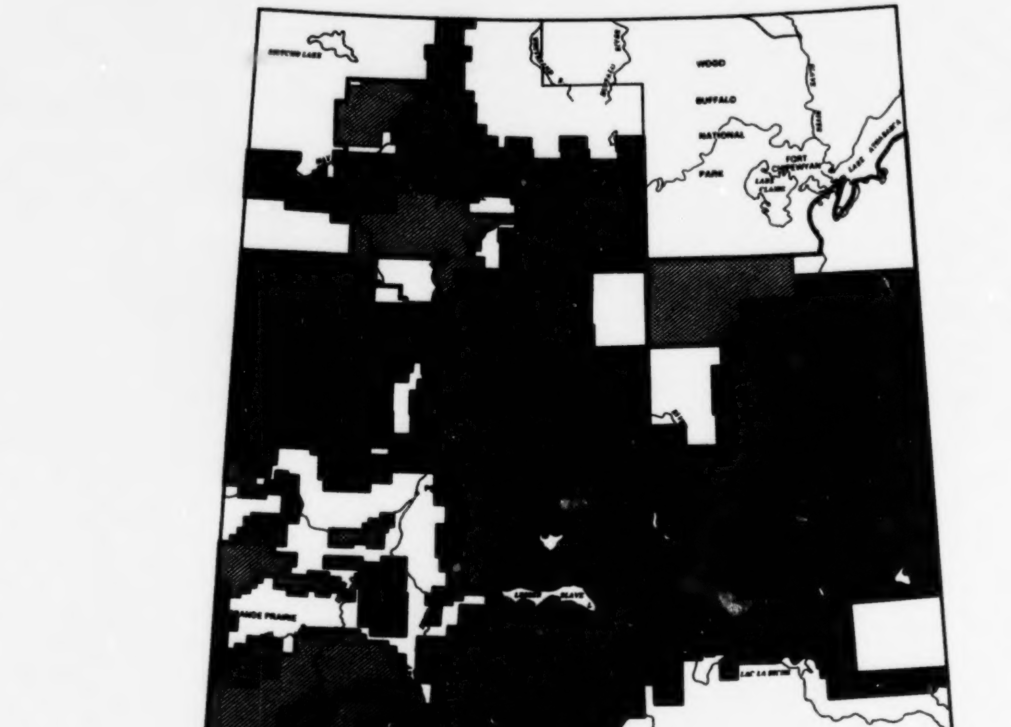
IN PROGRESS

30. SWAN HILLS
31. RED DEER-JAMES 86
32. COAL BRANCH

(TS) - TERRAIN SENSITIVITY

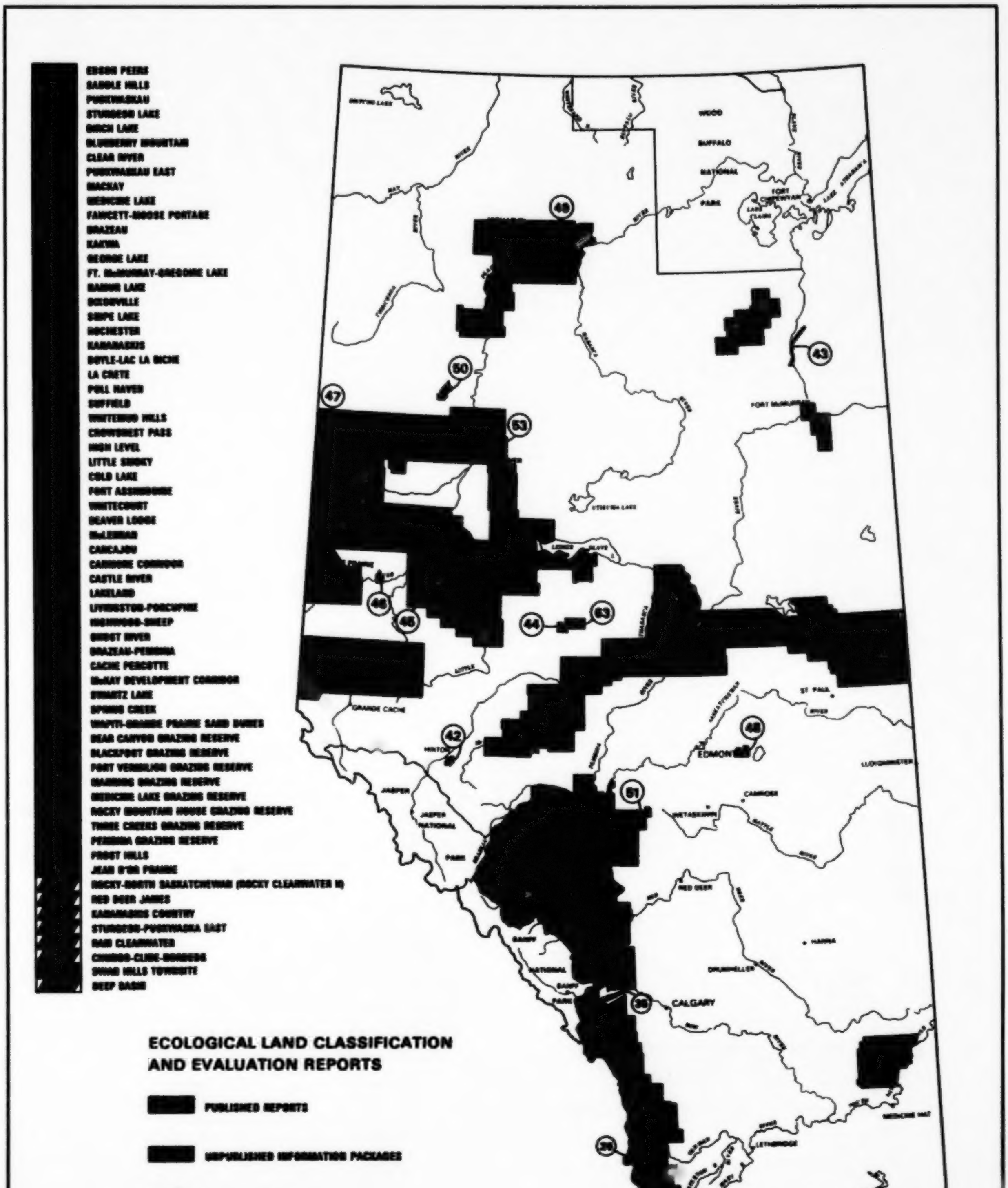
Source: Resource Evaluation and Planning Division

Map 6


PHASE 3 FOREST INVENTORY
PHOTO INTERPRETATION COMPLETED TO MARCH 31/83
MAP PREPARATION
COMPLETED TO PROVISIONAL STAGE UP TO MARCH31/83
FINALIZED UP TO MARCH 31/83
INVENTORY BOUNDARY
WOOD BUFFALO NATIONAL PARK
FORT CHIPEWYAN
LAKE ATHABASCA
GRANDE PRAIRIE
LAC LA BICHE
ST PAUL
EDMONTON
LLOYDMINSTER
CAMROSE
WETASKIWIN
BATTLE RIVER
JASPER
JASPER NATIONAL PARK
RED DEER
BANFF NATIONAL PARK
DRUMHELLER
CALGARY
LETHBRIDGE
MEDICINE HAT

Source: Resource Evaluation and Planning Division

Map 7

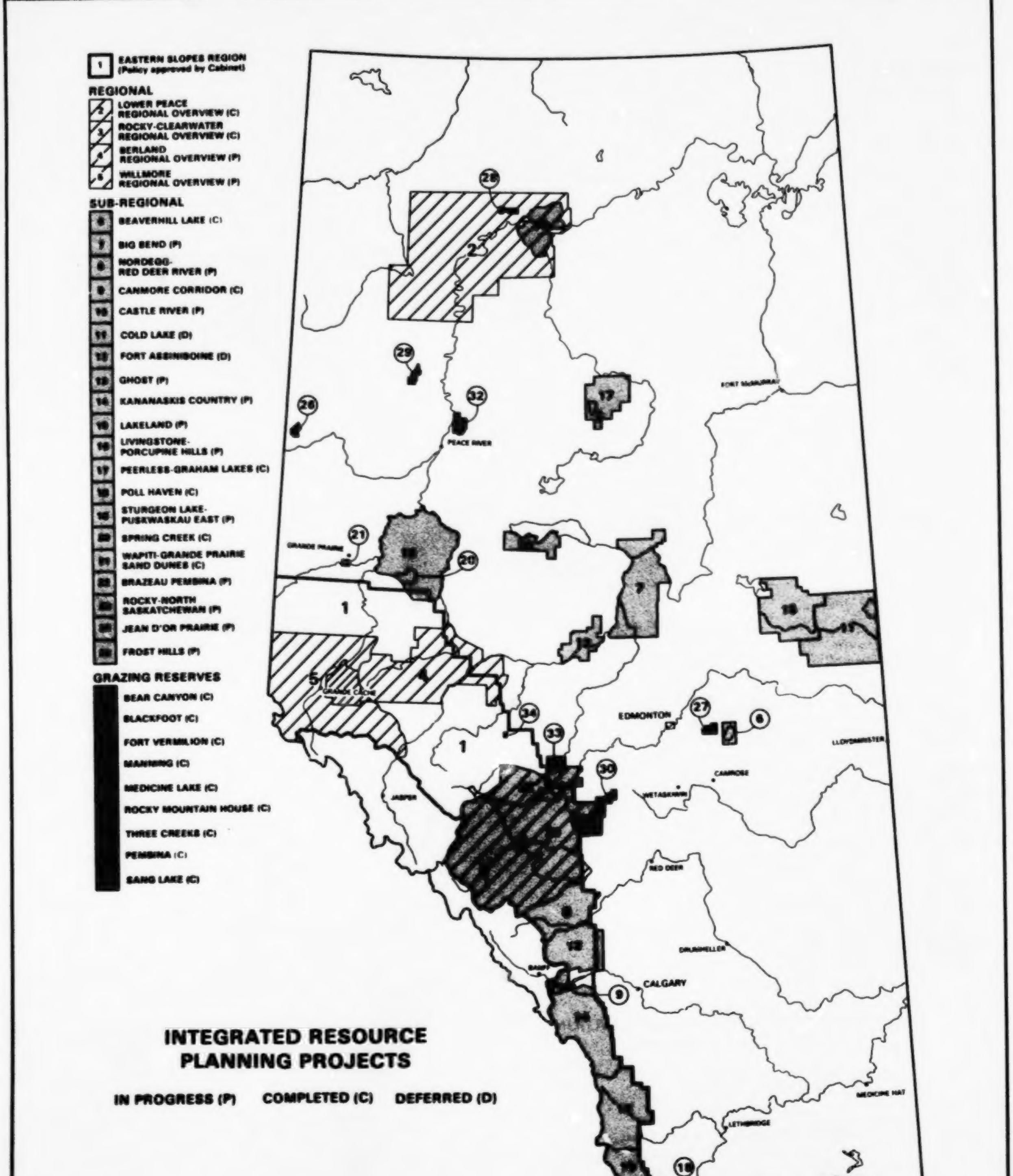


ECOLOGICAL LAND CLASSIFICATION AND EVALUATION REPORTS

EDSON PEERS
SADDLE HILLS
PUSKWASKAU
STURGEON LAKE
BIRCH LAKE
BLUEBERRY MOUNTAIN
CLEAR RIVER
PUSKWASKAU EAST
MACKAY
MEDICINE LAKE
FAWCETT-MOOSE PORTAGE
BRAZEAU
KAKWA
GEORGE LAKE
FT. McMURRAY-GREGOIRE LAKE
MANOR LAKE
DIXONVILLE
SNIPE LAKE
ROCHESTER
KANANASKIS
BOYLE-LAC LA BICHE
LA CRETE
POLL HAVEN
SUFFIELD
WHITEMUD HILLS
CROWSNEST PASS
HIGH LEVEL
LITTLE SMOKY
COLD LAKE
FORT ASSINIBOINE
WHITECOURT
BEAVER LODGE
McLENNAN
CARCAJOU
CANMORE CORRIDOR
CASTLE RIVER
LAKELAND
LIVINGSTON-PORCUPINE
HIGHWOOD-SHEEP
GHOST RIVER
BRAZEAU-PEMBINA
CACHE PERCOTTE
McKAY DEVELOPMENT CORRIDOR
SWARTZ LAKE
SPRING CREEK
WAPITI-GRANDE PRAIRIE SAND DUNES
BEAR CANYON GRAZING RESERVE
BLACKFOOT GRAZING RESERVE
FORT VERMILION GRAZING RESERVE
MANNING GRAZING RESERVE
MEDICINE LAKE GRAZING RESERVE
ROCKY MOUNTAIN HOUSE GRAZING RESERVE
THREE CREEKS GRAZING RESERVE
PEMBINA GRAZING RESERVE
FROST HILLS
JEAN D'OR PRAIRIE
ROCKY-NORTH SASKATCHEWAN (ROCKY CLEARWATER II)
RED DEER JAMES
KANANASKIS COUNTRY
STURGEON-PUSKWASKA EAST
RAM CLEARWATER
CHINOOK-CLINE-NORDEGG
SWAN HILLS TOWNSITE
DEEP BASIN
PUBLISHED REPORTS
UNPUBLISHED INFORMATION PACKAGES
IN PROGRESS REPORTS
WOOD
BUFFALO
NATIONAL
PARK
FORT CHIPEWYAN
LAKE ATHABASCA
FORT McMURRAY
49
43
50
47
53
46
45
44
63
42
48
61
30
29
23
GRANDE CACHE
HINTON
JASPER
JASPER NATIONAL PARK
EDMONTON
ST. PAUL
LLOYDMINSTER
CAMROSE
WETASKIWIN
RED DEER
HANNA
DRUMHELLER
BANFF NATIONAL PARK
BANFF
CALGARY
LETHBRIDGE
MEDICINE HAT

Source: Resource Evaluation and Planning Division

Map 8


1 EASTERN SLOPES REGION (Policy approved by Cabinet)
REGIONAL
LOWER PEACE REGIONAL OVERVIEW (C)
ROCKY-CLEARWATER REGIONAL OVERVIEW (C)
BERLAND REGIONAL OVERVIEW (P)
WILLMORE REGIONAL OVERVIEW (P)
SUB-REGIONAL
BEAVERHILL LAKE (C)
BIG BEND (P)
NORDEGG-RED DEER RIVER (P)
CANMORE CORRIDOR (C)
CASTLE RIVER (P)
COLD LAKE (D)
FORT ASSINIBOINE (D)
GHOST (P)
KANANASKIS COUNTRY (P)
LAKELAND (P)
LIVINGSTONE-PORCUPINE HILLS (P)
PEERLESS-GRAHAM LAKES (C)
POLL HAVEN (C)
STURGEON LAKE-PUSKWASKAU EAST (P)
SPRING CREEK (C)
WAPITI-GRANDE PRAIRIE SAND DUNES (C)
BRAZEAU PEMBINA (P)
ROCKY-NORTH SASKATCHEWAN (P)
JEAN D'OR PRAIRIE (P)
FROST HILLS (P)
GRAZING RESERVES
BEAR CANYON (C)
BLACKFOOT (C)
FORT VERMILION (C)
MANNING (C)
MEDICINE LAKE (C)
ROCKY MOUNTAIN HOUSE (C)
THREE CREEKS (C)
PEMBINA (C)
SANG LAKE (C)
28
2
29
26
32
PEACE RIVER
17
FORT McMURRAY
GRANDE PRAIRIE
21
20
7
1
15
11
5
GRANDE CACHE
34
33
EDMONTON
27
6
LLOYDMINSTER
1
30
CAMROSE
WETASKIWIN
JASPER
RED DEER
8
12
DRUMHELLER
BANFF
9
CALGARY
14
MEDICINE HAT
LETHBRIDGE
10
18
IN PROGRESS (P) COMPLETED (C) DEFERRED (D)

INTEGRATED RESOURCE PLANNING PROJECTS

Source: Resource Evaluation and Planning Division

Table 22

Provisional Forest Fire Summary by Forest

Calendar Year

	Athabasca	Bow/Crow	Edson	Footner Lake	Grande Prairie	Lac La Biche	Peace River	Rocky/ Clearwater	Slave Lake	Whitecourt	Totals ($)
Class of Fire											
A Spot — 0.10 Hectares	57	42	50	76	26	84	52	38	127	92	644
B 0.11 — 4.00 Hectares	47	4	15	85	15	73	51	15	73	32	410
C 4.10 — 40.00 Hectares	20	2	2	31	7	20	23	—	19	18	132
D 40.10 — 200.00 Hectares	2	1	1	5	2	11	3	—	10	2	37
E Over 200 Hectares	7	1	—	15	1	5	12	—	21	—	62
Cause of Fire											
Forestry Industry	—	—	3	1	—	—	—	—	—	2	6
Incendiary	2	2	3	8	2	13	7	—	27	6	70
Lightning	97	6	36	137	23	111	62	14	159	81	726
Misc. Known	9	7	4	8	6	6	7	4	20	8	79
Other Industry	1	3	1	10	4	10	5	13	7	16	70
Recreation	9	23	6	17	2	37	17	15	19	5	150
Resident	3	7	6	23	12	11	29	5	11	23	130
Railroad	1	1	5	—	—	2	11	2	3	1	26
Unknown	1	1	4	8	2	3	3	—	4	2	28
Total Number of Fires	123	50	68	212	51	193	141	53	250	144	1 285
Total Areas Burned (Hectares)	59 397	472	145	322 999	912	42 100	134 379	17	131 920	442	685 783
Fire Costs/Forest ($1 000)	4 119	60	5	11 803	670	5 231	17 390	22	16 193	419	55 912
Protection Budget and Other Costs											32 684
Insect and Disease											507
Total Protection Expenditure											89 103

SOURCE: Alberta Forest Service

Table 23

AFS Recreation Developments

After 1982 Construction Season

Forest	Auto Access Campgrounds	Camping Units	Day-use Units	Group Camps	Remote Campsites	Backcountry Campsites (on Trails or Rivers)	Water Access Points	Overflow Areas	Trails (km)
Athabasca	2	55	38	1	1	6	—	—	50
Bow/Crow	27	1 174	558	11	—	4	1	1	1 090
Edson	19	422	255	2	—	—	1	—	380
Footner Lake	6	72	80	—	1	—	—	—	—
Grande Prairie	6	247	165	1	—	—	2	—	65
Lac La Biche	8	263	92	1	2	—	2	—	—
Peace River	4	56	46	1	—	—	—	—	—
Rocky/Clearwater	28	777	315	7	—	—	2	2	190
Slave Lake	4	106	67	—	—	—	—	—	—
Whitecourt	5	126	42	—	—	—	—	—	245
Total	109	3 298	1 658	24	4	10	8	3	2 020

SOURCE: Alberta Forest Service

Table 24

Reforestation Surveys by Alberta Forest Service

1982/83

Forest	Regeneration Survey			Post Harvest Survey (hectares)
	Stocked (hectares)	Non-stocked (hectares)	Total (hectares)	
Athabasca	550	126	676	331
Bow/Crow	929	421	1 350	731
Edson	357	123	480	203
Footner Lake	691	286	977	363
Grande Prairie	1 003	178	1 181	100
Lac La Biche	1 023	315	1 338	0
Peace River	663	627	1 290	439
Rocky/Clearwater	1 097	155	1 252	793
Slave Lake	1 681	149	1 830	5 542
Whitecourt	440	220	660	1 090
Total	8 434	2 600	11 034	9 592

SOURCE: Alberta Forest Service

Table 25

Regeneration Surveys by the Forest Industry

1982/83

Forest	Stocked (hectares)	Non-stocked (hectares)	Total (hectares)
Athabasca	155.7	49.9	205.6
Bow/Crow	232.7	101.2	333.9
Edson	4 958.4	1 404.9	6 363.3
Footner Lake	1 301.0	263.0	1 564.0
Grande Prairie	1 402.2	231.8	1 634.0
Lac La Biche	118.4	0.0	118.4
Peace River	2 022.8	66.0	289.0
Slave Lake	1 101.4	370.4	1 471.8
Whitecourt	2 376.9	423.9	2 800.8
Total	13 892.5	3 090.2	16 982.7

SOURCE: Alberta Forest Service

Table 26

Reforestation Work by Alberta Forest Service

1982/83

Forest	Site Preparation		Seeding (hectares)	Cone Collection		Seeding Planting				Thinning
	Mechanical (hectares)	Chemical (hectares)		Pine (hecto-litres)	Spruce (hecto-litres	Conventional		Container		
						(hectares)	(number)	(hectares)	(number)	
Athabasca	—	—	—	—	—	—	—	289	382 092	—
Bow/Crow	709	—	176	1 217	286	801	760 105	319	425 600	—
Edson	724	—	144	306	7	89	200 364	243	432 702	399
Footner Lake	1 059	—	292	—	919	372	608 331	245	344 537	—
Grande Prairie	904	—	304	1 754	—	62	69 100	—	—	—
Lac La Biche	696	—	41	—	290	156	201 277	—	—	—
Peace River	201	—	411	112	318	—	—	847	1 176 350	55
Rocky/Clear-water	904	—	353	1 653	16	111	125 657	98	121 687	—
Slave Lake	2 173	—	1 491	12 360	3 383	557	710 286	684	825 454	—
Whitecourt	761	—	—	98	—	511	816 000	14	3 232	89
Total	8 131	—	3 212	17 500	5 219	2 659	3 491 120	2 739	3 711 654	543

SOURCE: Alberta Forest Service

Table 27

Reforestation and Silviculture Improvement Work by the Forest Industry

1982/83

Forest	Cone Collection					Seedlings Planted	
	Scarification	Seeding	Pine	Spruce	Thinning	Conventional	Container
	(hectares)	(hectares)	(hectolitres)	(hectolitres)	(hectares)	(number and area (ha))	(number and area (ha))
Athabasca	—	—	—	—	—	—	250 470 (200.8)
Bow/Crow	142.1	—	—	11.5	—	—	118 180 (89.9)
Edson	3 146.4	—	154.5	100.0	34.9*	251 250 (200.9)	2 545 800 (2 386.6)
Footner Lake	1 310.0	1 209.0	—	—	—	142 800 (130.0)	—
Grande Prairie	1 305.0	500.0	256.0	64.0	6.0	2 335 331 (1 867.0)	274 900 (218.0)
Lac La Biche	—	—	—	—	—	—	102 400 (95.5)
Peace River	1.6	1.6	97.0	—	—	—	94 800 (242.9)
Rocky/Clearwater	112.0	—	73.6	—	—	—	40 000 (35.0)
Slave Lake	253.0	253.0	—	—	5.7	—	476 930 (394.3)
Whitecourt	2 210.0	194.2	21.8	36.4	105.3**	—	298 030 (241.7)
Total	8 480.0	2 157.8	602.9	211.9	151.9	2 729 361 (2 197.9)	4 201 510 (3 904.7)

* Area treated under the Forest Employment Bridging Program.
** 46.6 ha treated under the Forest Employment Bridging Program.

SOURCE: Alberta Forest Service

Table 28

Maintaining Our Forests
Reforestation Work Program by Forest Activity

1982/83

Forest	Stocking Surveys			Site Preparation		Planting				Cone Collection (hectolitres)		Seeding (hectares)		Thinning (hectares)
	Aerial Recon.	Ground Recon.	Ground Intensive	Land Clearing	Scarification	Conventional		Container		Pine	Spruce	Aerial	Hand	
						Area (hectares)	Number of Trees	Area (hectares)	Number of Trees					
Footner Lake	110 000	—	—	1 660.0	—	—	—	880.0	1 588 496	—	620.0	—	—	—
Lac La Biche	27 000	181	698	1 971.1	2 035.4	—	—	1 857.0	3 008 980	—	241.0	30.2	—	—
Peace River	4 400	—	401	3 452.0	4 819.0	—	—	2 608.0	3 165 120	—	148.1	—	—	70.5
Slave Lake	14 000	2 629	1 821	3 007.7	3 101.0	142.4	225 183	1 119.1	1 586 218	—	—	—	—	—
Whitecourt														115.0
Rocky														236.0
Edson														280.1
Total	155 400	2 810	2 920	10 090.8	9 955.4	142.4	255 183	6 464.1	9 348 814	—	1 009.1	30.2	—	701.6

SOURCE: Alberta Forest Service

Table 29

Pine Ridge Forest Nursery Seed Program

1982/83

	Pine	Spruce	Total
Cones Received (hectolitres)	17 973	5 900	23 873
Cones Processed (hectolitres)	12 241	5 900	18 141
Seed Cleaned (kilograms)	2 660	6 580	9 240
Seed Storage (kilograms)	11 061	32 024	43 085

SOURCE: Alberta Forest Service

Table 30

Pine Ridge Forest Nursery Bareroot and Container Seedling Programs

1982/83

	Pine	Spruce	Total
Bareroot Program			
Seedling Inventory:			
age 0.0 - 1.0 year	500 000	10 870 000	11 370 000
age 1.0 - 2.0 years	986 800	21 939 400	22 926 200
age 2.0 - 3.0 years	1 120	9 144 649	9 145 769
Seedlings lifted	1 110 400	9 442 082	10 552 482
Seedlings shipped	1 586 285	5 751 427	7 337 712
Container Program			
Seedlings grown	1 856 272	15 859 472	17 715 744
Seedlings shipped	810 195	12 890 431	13 700 626

SOURCE: Alberta Forest Service

Table 31

Timber Operations on Public Lands

1982/83

		Forest Management Agreements, Timber Licences, Commercial Permits	Local Timber Permits, Tree Tags	Total Product Volume	Value per unit $	Total Value $
Active timber dispositions	Number	434	42 198			
Lumber and plywood logs (m³)	Coniferous	3 960 115	162 218	4 122 333	40.50	166 954 486.50
	Deciduous	93 198	22 823	116 021	31.45	3 648 860.45
Round timber (m³)	Coniferous	37 277	120 786	158 063	76.30	12 060 206.90
	Deciduous	228	2 525	2 753	76.30	210 053.90
Pulpwood (m³)	Coniferous	987 320	23 181	1 010 501	17.45	17 633 242.45
	Deciduous	—	1 802	1 802	17.45	31 444.90
Woodchips (m³)	Coniferous	853 307	—	853 307	11.03	9 411 976.21
Fuelwood (m³)	Coniferous	3 375	75 693	79 068	20.77	1 642 242.36
	Deciduous	165	51 366	51 531	20.77	1 070 298.87
Railway ties (m³)	Coniferous	17 996	—	17 996	60.12	1 081 919.52
Slabs (m³)	Coniferous	225	—	225	20.77	4 673.25
Lath (m³)	Coniferous	—	63	63	454.55	28 636.65
Christmas Trees	Number	605	49 848	50 453	3.00	151 359.00
Transplants	Number	—	15 941	15 941	2.00	31 882.00
Total volume (m³)	Coniferous	5 006 083	381 941	5 388 024		209 000 624.84
	Deciduous	93 591	78 516	172 107		4 960 658.12
		5 099 674*	460 457*	5 560 131*		213 961 282.96

* Excludes woodchips and slabs.

Note: Production on other Crown lands not included in the above:
Federal Parks — 145 100 m³.

SOURCE: Alberta Forest Service

Table 32

Timber Dispositions Issued

1982/83

Class	Number Issued	Class	Number Issued
Coniferous timber quota	7	Local timber permits	1 841
Deciduous timber allocations (DTA)	—	Tree tags	40 357
Licences:		Customer sawmill, planer mill or timber treating or processing plant permits	26
Coniferous quota	10		
Deciduous, DTA	—		
Commercial Timber Permits:			
Coniferous — green	29		
Coniferous — dead or damaged	35		
Deciduous green	—		

SOURCE: Alberta Forest Service

Table 33

Status of Lands in Alberta

March 31, 1983

	Area		Percentage of Alberta
	square kilometres	square miles	
Privately-owned land	181 581	70 109	27.5
Public lands			
Under disposition leading to title	2 714	1 048	0.4
Under disposition not leading to title	28 824	11 129	4.4
Special areas	14 051	5 425	2.1
Provincial parks, wilderness areas	2 323	897	0.3
Willmore Park, ENR natural areas	4 766	1 840	0.7
Metis settlements	5 053	1 951	0.8
Indian reserves	6 566	2 535	1.0
Non-settled public lands			
Forested lands within the Green Area[a]	279 131	107 773	42.2
Forest management agreement areas and provisional reserve	57 868	22 343	8.8
Vacant public land (within Yellow and White Areas[b])	15 252	5 889	2.3
Federally-controlled lands (national parks, research stations, Department of National Defence, etc.)	63 056	24 346	9.5
Total area of Alberta	661 185	255 285	100.0
Land	644 389	248 800	97.5
Water	16 796	6 485	2.5

SOURCE: Public Lands Division

[a] Green Area: Forested lands withdrawn from settlement, managed for forestry and other multiple uses.

[b] Yellow Area: Lands located in the Peace River region. Public lands in this area are managed for multiple use, including agricultural uses, pursuant to the Public Lands Act and regulations.

White Area: The settled area of the province. Suitable public lands within this area may be disposed pursuant to the Public Lands Act and regulations, except for homestead sale dispositions.

Table 34

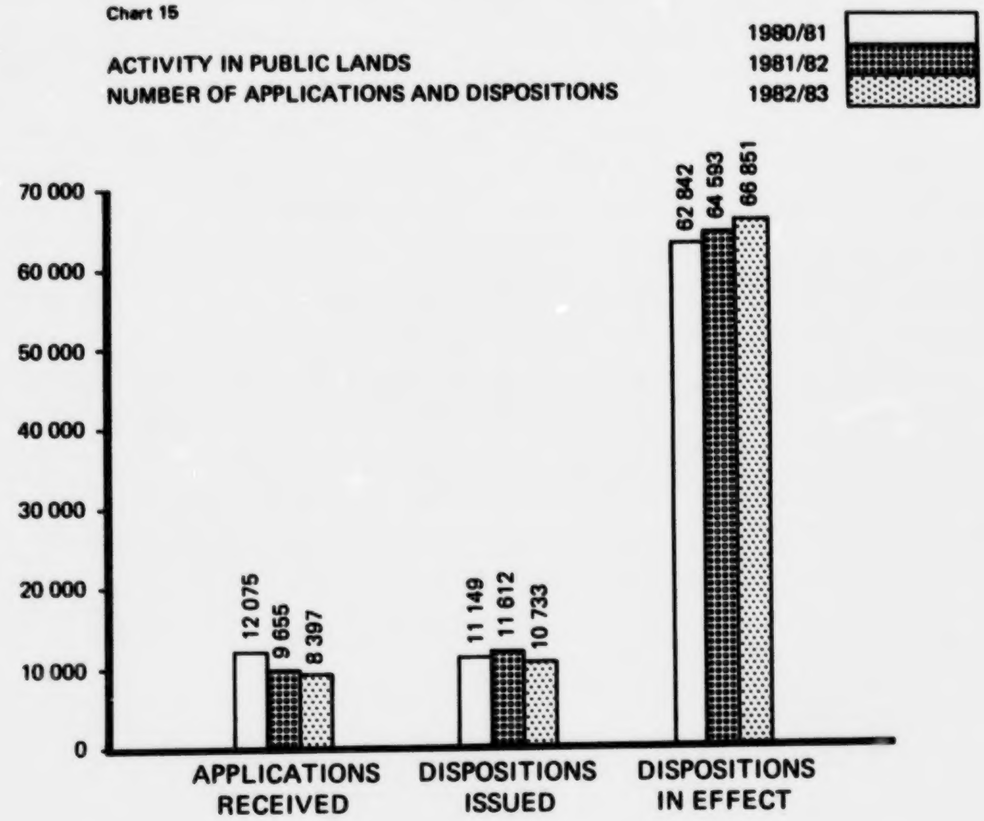
Applications For Public Lands

	Number Received			Number Received	
	1981/82	1982/83		1981/82	1982/83
Cultivation permits	117	133	Miscellaneous leases	144	154
Farm development leases	596	447	Miscellaneous leases (subdivision lots)	121	83
Farm development sales	614	380			
Forest grazing licences	29	37	Miscellaneous permits	594	445
Grazing leases	734	621	Oil sands exploration	—	6
Grazing permits	1 005	879	Pipeline agreements	779	669
Homestead sales	524	317	Pipeline installation leases	72	52
Public land sales	107	99	Recreational leases	41	55
Coal exploration	56	33	Surface material leases	72	63
Easements	258	201	Surface material licences	698	896
Licence of occupation	1 317	1 102	Total	9 655	8 397
Mineral surface leases	1 777	1 725			

SOURCE: Public Lands Division

Chart 15

ACTIVITY IN PUBLIC LANDS
NUMBER OF APPLICATIONS AND DISPOSITIONS



Source: Public Lands Division

Table 35

Public Lands Disposition Statistics

DISPOSITIONS IN EFFECT	1981/82			1982/83		
	number	hectares	acres	number	hectares	acres
Dispositions leading to title						
Agricultural dispositions:						
Agricultural farm sales	281	24 602	60 746	219	19 698	48 674
Farm development sales	964	95 952	236 918	1 002	100 853	249 208
Homestead sales, leases	1 366	170 267	420 413	1 169	146 777	362 685
Public land sales	61	3 815	9 419	57	4 076	10 071
Total	2 672	294 636	727 496	2 447	271 404	670 638
Non-agricultural dispositions:						
Public land sales[a]	72	83.5 lots		112	125.5 lots	
Dispositions not leading to title						
Agricultural dispositions:						
Cultivation permits	117	2 404	5 935	133	2 796	6 910
Farm development leases	1 458	143 311	353 854	1 494	142 031	350 958
Forest grazing licences	54	19 829	48 961	60	21 554	53 261
Grazing leases	5 367	2 165 438	5 346 761	5 457	2 162 807	5 344 295
Grazing permits	913	122 779	303 159	879	116 354	287 510
Seed crop leases	3	3 846	9 496	2	3 495	8 635
Total	7 912	2 457 607	6 068 166	8 025	2 449 037	6 051 569
Non-Agricultural dispositions (special uses)						
Alberta Housing Corporation:						
Metis leases	7	24	60	7	19	47
Mineral surface leases	16 025	71 847	177 399	17 267	76 032	187 875
Miscellaneous leases	499	21 448	52 957	561	22 069	54 532
Pipeline agreement leases	8 778	39 400	97 285	9 324	43 297	106 988
Pipeline installation leases	492	483	1 193	535	529	1 308
Recreational leases	273	7 086	17 497	280	7 077	17 488
Sand and gravel leases[b] surface material leases	416	5 770	14 247	450	6 147	15 190
Staff housing land licences	16	6	15	16	6	15
Total	26 506	146 064	360 653	28 440	155 176	383 443

DISPOSITIONS IN EFFECT	1981/82			1982/83		
	number	hectares	acres	number	hectares	acres
'D' Reservations	1 741			1 818		
Easements	3 620			3 764		
Licence of occupation	7 756	area		8 478	area	
Miscellaneous permits	594			445		
Miscellaneous leases (subdivision lots)	645	not		646	not	
Surface materials licences	698	available		896	available	
Right of entry	5 449			5 461		
Total	20 503			21 508		
Letters of authority (equivalent to a disposition)	6 928	—	—	6 319	—	—
Notification for title and title transfers						
Farm development sales[c]	174	15 573	38 453	174	15 074	37 248
Homestead dispositions	273	28 753	70 995	225	25 830	63 826
Other sales	36	1 123	2 772	25	1 208	2 985
Transfers of administration and control	27	3 419	8 442	17	1 583	3 912
Exchange of land	16	989	2 442	29	1 439	3 557
Special grants and free grants	5	224	554	13	467	1 155
Lots — Notifications	28	—	—	7	—	—
— Transfer of Administration and Control	13	—	—	2	—	—
Total	572	50 081	123 658	492	45 601	112 683
Lands acquired by revestment[d]						
Exchange of land	47	1 307	3 226	21	813	2 009
Purchased under land assembly	155	3 480	8 592	82	2 724	6 731
From Canada (PFRA Canal rights-of-way)	38	200	494	1	13	33
Other	46	398	983	51	170	419
Total	286	5 385	13 295	155	3 720	9 192

DISPOSITIONS IN EFFECT	1981/82			1982/83		
	number	hectares	acres	number	hectares	acres
Other Transactions						
Notifications to Minister (pseudo revestment)	190	10 170	25 110	489	31 642	78 187
Private subdivisions checked to determine if public lands affected						
Subdivision applications checked	1 155	—	—	974	—	—
Subdivision plans approved	175	—	—	149	—	—
Total	1 330	—	—	1 123	—	—
Number of survey plans approved and indexed	2 062	—	—	3 160	—	—
Survey of public lands						
Quarter sections	175	—	—	240	—	—
Lots	8	—	—	25	—	—
Posting of public lands						
Quarter sections	1 821	—	—	1 245	66 641	164 672
Subdivision lots	—	—	—	4	—	—

SOURCE: Public Lands Division

[a] Includes sales for industrial, residential, recreational and commercial purposes.

[b] Commencing Jan. 11, 1978, issuing of these dispositions was discontinued. They were replaced by surface material leases.

[c] Including farm development sales, agricultural farm sales.

[d] Statistics in the number columns are the number of quarter sections or part thereof.

Table 38

Land Area and Utilization of Provincial Grazing Reserves

Grazing Reserve	Total Area		Developed Area[a]		AUMs[b] Utilized Number	Number of Patrons
	hectares	acres	hectares	acres		
Bear Canyon	8 369	20 681	3 288	8 125	3 702	20
Blueberry Mountain	3 765	9 304	1 983	4 900	4 138	23
Kleskun Lake	5 304	13 107	4 508	11 140	9 611	91
Valleyview	5 302	13 100	2 054	5 075	3 494	35
Wanham	7 582	18 735	5 761	14 235	8 321	54
Total Grande Prairie Reserves	30 322	74 927	17 594	43 475	29 266	223
Fort Vermilion	7 781	19 226	3 642	9 000	1 175	12
High Prairie	11 414	28 204	3 466	8 564	3 927	17
Manning	4 015	9 920	1 433	3 540	1 716	14
Three Creeks	15 997	39 529	3 078	7 606	2 057	9
Whitemud	9 571	23 650	4 290	10 600	5 980	43
Total Peace River Reserves	48 778	120 529	15 909	39 310	14 855	95
Black Bear	6 911	17 078	4 348	10 745	8 422	74
Connor Creek	13 250	32 740	7 007	17 315	16 403	93
Thorhild	6 867	16 968	3 529	8 720	8 956	57
Total Edmonton Reserves	27 028	66 786	14 884	36 780	33 781	224
Buck Mountain	6 926	17 114	3 628	8 964	15 412	92
Jack Pine	5 149	12 722	2 420	5 981	8 251	44
Medicine Lake	6 601	16 311	3 739	9 240	7 997	59
Pembina[c]	7 907	19 537	—	—	—	—
Rocky Mountain House[c]	6 411	15 842	629	1 555	—	—
Sang Lake[c]	2 723	6 729	—	—	—	—
Total West-Central Reserves	35 717	88 255	10 416	25 740	31 660	195
Minburn	5 474	13 527	3 037	7 500	6 480	66
Rannach	7 635	18 866	5 953	14 710	8 501	62
Smoky Lake	5 485	13 554	1 813	4 477	2 966	21
St. Paul	9 579	23 669	6 230	15 382	7 793	50
Wolf Lake	11 802	29 162	4 520	11 169	2 919	31
Total St. Paul Reserves	39 975	98 778	21 553	53 238	28 659	230
Hays	2 770	6 845	384	950	2 055	29
Lonesome Lake	4 753	11 745	3 501	8 650	10 126	75
Purple Springs	2 223	5 492	648	1 600	4 658	52
Twin River	13 421	33 163	—	—	8 667	68
Total Lethbridge Reserves	23 167	57 245	4 533	11 200	25 506	224
Bow Island	15 794	39 028	3 321	8 207	11 213	76
Seven Persons	2 683	6 630	1 253	3 097	4 705	53
Pinhorn	30 900	76 353	—	—	11 076	78
Sage Creek	30 914	76 388	—	—	8 169	55
Total Medicine Hat Reserves	80 291	198 399	4 574	11 304	35 163	262
Provincial Total	285 278	704 422	89 463	221 047	198 890	1 453

SOURCE: Public Lands Division

[a] Area cleared, worked down, and seeded.

[b] An AUM (Animal Unit Month) is forage provided for one animal unit (one mature cow with calf or their equivalent) for one month. Statistics include sheep and horses.

[c] Grazing reserves not yet operational.

Table 37

New Development on Provincial Grazing Reserves

As of March 31/83

Grazing Reserve	Area Developed or Improved hectares (acres)								Kilo-Metres (miles) Fenced	Number of Dugouts
	Cleared and Piled	Burned[a]	Repiled[a]	Broken	Worked Down	Seeded	Aerial Sprayed	Ferti-lized		
Bear Canyon[b]	— —	2 554 (6 307)	2 222 (5 487)	424 (1 048)	1 191 (2 940)	151 (373)	— —	— —	43 (27)	5
Blueberry Mountain[b]	— —	— —	— —	— —	321 (793)	— —	— —	— —	8 (5)	3
Kleskun Lake	— —	— —	— —	— —	— —	— —	— —	— —	5 (3)	6
Valleyview[b]	— —	— —	1 140 (2 815)	67 (165)	— —	— —	— —	— —	— —	—
Wanham	—	—	—	—	—	—	—	—	—	—
Total Grande Prairie	— —	2 554 (6307)	3 362 (8 302)	491 (1 213)	1 512 (3 733)	151 (373)	— —	— —	56 (35)	14
Fort Vermilion[b]	— —	— —	2 284 (5 639)	— —	2 428 (5 995)	1 812 (4 475)	— —	368 (910)	51 (32)	—
High Prairie[b]	— —	— —	2 569 (6 343)	154 (380)	1 516 (3 743)	1 275 (3 149)	— —	— —	64 (40)	—
Manning[b]	— —	— —	1 086 (2 681)	— —	1 464 (3 614)	1 464 (3 614)	— —	— —	22 (14)	—
Three Creeks[b]	842 (2 080)	817 (2 018)	3 035 (7 493)	817 (2 018)	2 103 (5 192)	2 103 (5 192)	— —	992 (2 450)	46 (29)	6
Whitemud	212 (523)	— —	— —	— —	547 (1 350)	547 (1 350)	— —	— —	— —	6
Total Peace River	1 054 (2 603)	817 (2 018)	8 974 (22 156)	971 (2 398)	8 058 (19 894)	7 201 (17 780)	— —	1 360 (3 360)	183 (115)	12

Grazing Reserve	Area Developed or Improved hectares (acres)								Kilo-Metres (miles) Fenced	Number of Dugouts
	Cleared and Piled	Burned[a]	Repiled[a]	Broken	Worked Down	Seeded	Aerial Sprayed	Ferti-lized		
Black Bear	197 (487)	— —	— —	— —	241 (595)	241* (595)	425 (1 050)	— —	— —	—
Connor Creek	778 (1 920)	— —	— —	— —	800 (1 975)	533 (1 315)	565 (1 395)	121 (300)	11 (7)	—
Thorhild	— —	— —	— —	— —	213 (525)	213* (525)	612 (1 510)	— —	— —	—
Total Edmonton	975 (2 407)	— —	— —	— —	1 254 (3 095)	987 (2 435)	1 602 (3 955)	121 (300)	11 (7)	—
Buck Mountain	—	—	—	—	—	—	—	—	—	—
Jack Pine	124 (307)	— —	283 (700)	— —	— —	— —	— —	— —	22 (14)	—
Medicine Lake[b]	117 (290)	— —	243 (600)	— —	850 (2 100)	810 (2 000)	— —	— —	14 (9)	—
Pembina[b]	1 560 (3 852)	1 099 (2 713)	1 099 (2 713)	564 (1 392)	— —	— —	— —	— —	— —	—
Rocky Mountain House[b]	797 (1 969)	314 (775)	314 (775)	71 (175)	1 172 (2 895)	630 (1 555)	— —	— —	— —	11
Sang Lake[b]	208 (513)	— —	— —	— —	— —	— —	— —	— —	— —	—
Total West-Central	2 806 (6 931)	1 413 (3 488)	1 939 (4 788)	635 (1 567)	2 022 (4 995)	1 440 (3 555)	— —	— —	36 (23)	11
Minburn	—	—	—	—	—	—	—	—	—	—
Rannach	— —	— —	— —	178 (439)	178 (439)	178 (439)	— —	1 328 (3 280)	6 (4)	—
St. Paul	—	—	—	—	—	—	—	—	—	—
Smoky Lake	1 112 (2 746)	147 (364)	147 (364)	147 (364)	— —	— —	— —	810 (2 000)	— —	—
Wolf Lake[b]	239 (591)	1 225 (3 025)	1 225 (3 025)	1 966 (4 855)	741 (1 830)	741 (1 830)	— —	1 215 (3 000)	40 (25)	10
Total St. Paul	1 351 (3 337)	1 372 (3 389)	1 372 (3 389)	2 291 (5 658)	919 (2 269)	919 (2 269)	— —	3 353 (8 280)	46 (29)	10

Grazing Reserve	Area Developed or Improved hectares (acres)								Kilo-Metres (miles) Fenced	Number of Dugouts
	Cleared and Piled	Burned[a]	Repiled[a]	Broken	Worked Down	Seeded	Aerial Sprayed	Ferti-lized		
Hays	— —	— —	— —	167 (412)	167 (412)	167 (412)	— —	373 (920)	37 (23)	—
Lonesome Lake	— —	— —	— —	— —	— —	— —	— —	526 (1 300)	5 (3)	—
Purple Springs	— —	— —	— —	— —	— —	— —	— —	445 (1 100)	— —	—
Twin River	— —	— —	— —	— —	— —	— —	— —	— —	— —	3
Total Lethbridge	— —	— —	— —	167 (412)	167 (412)	167 (412)	— —	1 344 (3 320)	42 (26)	3
Bow Island	— —	— —	— —	— —	— —	26 (63)*	— —	— —	16 (10)	—
Pinhorn	— —	— —	— —	— —	— —	— —	— —	— —	8 (5)	1
Sage Creek	— —	— —	— —	— —	— —	— —	— —	— —	3 (2)	—
Seven Persons	— —	— —	— —	134 (330)	134 (330)	219 24 (540)(60)*	— —	— —	2 (1)	—
Total Medicine Hat	— —	— —	— —	134 (330)	134 (330)	269 (663)	— —	— —	29 (18)	1
Provincial Total	6 186 (15 278)	6 156 (15 202)	15 647 (38 635)	4 689 (11 578)	14 066 (34 728)	10 865 (27 487)	1 602 (3 955)	6 178 (15 260)	403 (253)	51

SOURCE: Public Lands Division

[a] Areas shown represent the areas previously cleared. The material from that clearing is burned and repiled.

[b] Alberta Heritage Savings and Trust Fund projects.

* Reseeded.

Table 38

Grazing Reserve Development and Improvements Costs

Thousands of Dollars

	1981/82		1982/83	
	Regular Funding $	Alberta Heritage Savings and Trust Funding $	Regular Funding $	Alberta Heritage Savings and Trust Funding $
Northern reserves	314.9	3 599.1	363.0	2 170.8
West-central reserves	368.2	853.2	640.7	1 322.7
East-central reserves	385.4	524.9	346.1	443.6
Southern reserves	413.1	—	601.9	—
Total Cost	1 481.6	4 977.2	1 951.7	3 937.1

SOURCE: Public Lands Division

NOTE: Improvement costs include land development, improvements, fertilization, and aerial spraying.

Table 39

Posting of Agricultural Lands

1982/83

Region	For Sale Purposes			For Lease Purposes[c]			For Grazing Purposes			Total		
	Number[b]	Hectares	Acres	Number	Hectares	Acres	Number	Hectares	Acres	Number	Hectares	Acres
Peace River[a]	180	11 032	27 259	27	1 443	3 565	328	14 164	35 000	535	26 639	65 824
North East	14	867	2 144	40	1 778	4 393	367	20 058	49 563	421	22 703	56 100
Eastern Slopes	9	542	1 339	—	—	—	254	15 406	38 068	263	15 948	39 407
Central	1	47	117	2	83	206	15	819	2 023	18	949	2 346
Southern	—	—	—	—	—	—	8	403	995	8	403	995
Total	204	12 488	30 859	69	3 304	8 164	972	50 850	125 649	1 245	66 642	164 672

SOURCE: Public Lands Division

[a] Includes homestead sales

[b] Number of quarters or parts thereof

[c] Farm development leases without option to purchase

Table 40

Common Convictions Under the Wildlife Act

1982/83

Section	Frequency	Percent	Average Fine $
29(1) Loaded Firearm	278	25.4	105.50
24(2) Occupied Land	151	13.8	78.64
46(1) Fail to Carry Licence/Tags	119	10.9	10.63
20 Illegal Possession	110	10.0	172.32
19 Unauthorized Times	113	10.3	189.03
18 No Licence	79	7.2	134.18
50(1)(D) Night Light	28	2.6	538.40
Other	217	19.8	111.30
Total	1 095	100.0	121.11*

* Fines for all 1 095 convictions under the Wildlife Act total $132 610.00

SOURCE: Fish and Wildlife Division

Table 41

Prosecution Breakdown by Act

1982/83

Act	Frequency	Percent
Alberta Fishing Regulations	1 270	29.4
Wildlife Act	1 474	34.1
Liquor Control Act	507	11.7
Small Vessels Regulations	211	5.0
Off Highway Vehicle	206	4.8
Game Hunting Regulations	268	6.2
Migratory Birds Conv. Act/Regulations	48	1.1
Other	333	7.7
Total	4 317	100.0

SOURCE: Fish and Wildlife Division

Table 42

Types of Prosecutions*

1982/83

	Type	Frequency	Percent
Wildlife			
	Big Game	638	14.8
	Upland Bird	79	1.8
	Migratory Bird	48	1.1
	Miscellaneous Wildlife	1 031	23.9
	(Total wildlife)	(1 796)	(41.6)
Fisheries		1 316	30.5
Other			
	Liquor	507	11.7
	Small Vessels	211	4.9
	Off Highway	206	4.8
	Highway Traffic/Motor Vehicle	88	2.0
	Criminal Code	61	1.4
	Litter	52	1.2
	Miscellaneous	80	1.9
	(Total other)	(1 205)	(27.9)
Total		4 317	100.0

* Includes all prosecutions concluded and still pending as of March 31, 1983.

SOURCE: Fish and Wildlife Division

Table 43

Pleas Entered for Charges and Disposition of Charges

1982/83

Plea	Frequency	Percent
Guilty	2 073	48.0
Voluntary ticket	1 286	29.8
Not guilty	161*	3.7
Pending	626	14.5
Unknown	171	4.0
Total	4 317	100.0
Disposition		
Guilty	3 421	79.2
Not guilty	35	.8
Withdrawn	229	5.3
Pending	626	14.5
Dismissed	6	.1
Total	4 317	100.0

* Of the 161 individuals pleading not guilty, 65 were found guilty, 35 were found not guilty, 56 had the charges withdrawn and five had the charges dismissed.

SOURCE: Fish and Wildlife Division

Table 44

Convictions Resulting in Licence Suspension

1982/83

Type of Suspension	Frequency	Average Fine $	Average Age
Big game*	338	216.82	32.2
Bird game*	61	78.70	35.4
Fur/other	42	131.30	32.3
Migratory bird	38	51.84	28.2
Total	479	178.48	32.3

* Mandatory hunter test requirement applies

SOURCE: Fish and Wildlife Division

Table 45

Age Breakdown of Offenders Required to Take Hunter Test

1982/83

Age	Big Game		Bird Game		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Under 20	21	6.3	5	8.2	26	6.5
20 - 24	69	20.4	10	16.4	79	19.8
25 - 29	72	21.2	6	9.8	78	19.6
30 - 34	60	17.7	14	23.1	74	18.6
35 - 39	34	10.1	8	13.3	42	10.5
40 - 44	36	10.6	6	9.8	42	10.5
45 and over	46	13.7	12	19.4	58	14.5
Total	338	100.0	61	100.0	399	100.0

Table 46

Age Breakdown for all Convictions

1982/83

Age	Wildlife		Fisheries		Other		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
15 and under	1	0.1	0	0	1	0.1	2	.1
16 - 19	111	6.2	120	9.1	95	7.9	326	7.5
20 - 24	343	19.0	343	26.1	338	28.1	1 024	23.7
25 - 29	378	21.0	284	21.5	275	22.8	937	21.7
30 - 34	299	16.6	186	14.1	167	13.9	652	15.1
35 - 39	230	12.8	130	9.8	117	9.6	477	11.1
40 - 44	160	9.0	72	5.5	72	6.0	304	7.0
45 - 49	106	5.8	58	4.4	46	3.9	210	4.9
50 - 54	73	4.1	47	3.5	42	3.5	162	3.8
55 - 59	38	2.1	31	2.4	23	1.8	92	2.1
60 and over	57	3.3	45	3.6	29	2.4	131	3.0
Total	1 796	100.0	1 316	100.0	1 205	100.0	4 317	100.0

SOURCE: Fish and Wildlife Division

Table 47

Summary of Convictions

1982/83

Problem Wildlife	Number	Percent
Beaver	3 477	15.7
Black bear	1 158	5.2
Grizzly bear	78	.4
Wolf	218	1.0
Fox	65	.3
Coyote	332	1.5
Cougar	61	.3
Skunk	945	4.3
Migratory bird	410	1.8
Deer	261	1.2
Elk	90	.4
Moose	52	.2
Other ungulates	29	.1
Other mammals	178	.8
Raptors	109	.5
Other	796	3.6
Subtotal	8 259	37.3
Found Wildlife		
Road kills	2 604	11.7
Diseased/injured	1 694	7.6
Found Dead wildlife/applications to keep	1 370	6.2
Found Dead wildlife/other	590	2.7
Other found wildlife	750	3.4
Subtotal	7 008	31.6
Enforcement		
Environmental	382	1.7
Night hunting	432	2.0
Other unauthorized hunting	1 206	5.4
Closed season	1 229	5.5
Licencing	647	3.0
Trafficking	154	.7
Illegal possession	135	.6
Other enforcement	1 170	5.3
Subtotal	5 355	24.2
Other Occurrences		
Native harvest	168	.7
Miscellaneous	1 371	6.2
Subtotal	1 539	6.9
Total	22 161	100.0

SOURCE: Fish and Wildlife Division

Table 48

Species and Number of Fish Stocked

1982/83

Species	Number
Rainbow trout	4 882 736
Lake trout	246 280
Cutthroat trout	93 565
Eastern brook trout	266 732
Brown trout	8 242
Northern pike	1 740
Yellow perch	140 180
Walleye	150 653
Total	5 790 128

SOURCE: Fish and Wildlife Division

Table 49

Distribution of Stocked Fish

1982/83

Region	Fish stocked
Southern Region	1 497 697
Central Region	518 764
East Slopes Region	2 368 651
North East Region	761 016
Peace River Region	644 000
Total	5 790 128

SOURCE: Fish and Wildlife Division

Table 50

Commercial Fish Production in Alberta

Year	Weight	Value to fishermen $	Value as marketed $
1980/81	2 486 tonnes	1 850 440	3 326 324
1981/82 (revised)	2 245 tonnes	1 627 798	3 213 411
1982/83	2 380 139 kg	1 791 011	3 074 297

SOURCE: Fish and Wildlife Division

Table 51

Buck for Wildlife Program — On-going Wildlife Projects

1982/83

Region	Project	Target species	1982/83 Budget $	Development Activities
Southern	Mountain Bluebird Trails	Bluebirds	2 250	Construction and installation of nest boxes
	Pelican Island	Pelicans and cormorants	1 000	Island stabilization
	Stirling Lake	Waterfowl	3 000	Water supply improvement
Central	Buffalo Lake	Multiple	1 500	Project in planning
	Namaka Lake	Multiple	5 600	Habitat protection and development for waterfowl and upland game birds
	Slack Slough	Multiple	20 000	Development of a waterfowl marsh and facilities for public viewing and interpretation.
	Landowners' Wildlife Habitat Program	Multiple	150 000	Habitat protection and improvement on private land
Northeast	Beaverhill Lake	Multiple	5 000	Habitat protection and enhancement through range improvement and development
	Lychak	Multiple	51 500	Habitat protection and enhancement through range improvement and development
Eastern Slopes	Athabasca Ranch	Elk	20 000	Protection and improvement of elk winter range
	Chip Lake		10 000	Range improvement
	Shinningbank		31 000	Project in planning. Ungulate habitat improvement
Peace River	Birch Hills	Ungulates	30 000	Evaluation of mechanical clearing to increase browse production
	Simonette River	Ungulates	23 000	Protection and improvement of ungulate wintering habitat
Provincial	Goose Bale Program	Geese	5 000	Provision of secure nesting sites for geese
	Shelterbelt Maintenance	Multiple	2 150	Secure nesting, escape and travel cove for wildlife
	General Services	N/A	178 000	Supplies, services, wages, fixed assets, rentals
Total cost			539 000	

SOURCE: Fish and Wildlife Division

Table 52

Buck for Wildlife Program — New Projects

1982/83

Region	Project	Target species	1982/83 Budget $	Development Activities
Southern	CPR Reservoir	Waterfowl	6 000	Engineering studies, bank stabilization
	Moose habitat improvement (Porcupine Hills)	Moose	30 000	Appraisal of habitat development potential
	Ridge Reservoir	Multiple	5 000	Wetland and upland habitat development
	Walsh Flats	Antelope	25 000	Winter range habitat protection and management
South/Central	Feruginous Hawks	Raptors	20 000	Nest site development for Feruginous Hawks
Central	Fallentimber	Multiple	4 000	Riparian habitat protection
Northeast	Rochester habitat Management area	Multiple	40 000	Habitat maintenance and development
	Athabasca Elk Intercept Feeding Progam	Elk	18 000	Upland habitat development to provide winter feed for elk and prevention of depredation of agricultural lands
Easter Slopes	Brazeau Osprey	Osprey	10 000	Restoration of osprey nest sites.
	Elk winter range	Elk	30 000	Ungulate winter range improvement in several wintering areas
Total Cost			188 000	

SOURCE: Fish and Wildlife Division

Table 53

Alberta Fur Production (Wild Fur)

1982/83

	Number of Pelts	Mean Price Per Pelt $	Value $
Badger	1 580	37.77	59 676.60
Beaver	54 054	17.59	950 809.86
Black bear	218	58.29	12 707.22
Bobcat	50	219.26	10 963.00
Coyote	37 447	58.63	2 195 517.61
Ermine/weasel	10 827	2.14	23 169.78
Fisher	5 055	126.56	639 760.80
Fox (silver)	151	44.66	6 743.66
Fox (cross)	800	87.68	70 144.00
Fox (white)	20	29.95	599.00
Fox (red)	2 513	44.04	110 672.52
Lynx	8 315	280.16	2 329 530.40
Marten	10 640	41.77	444 432.80
Mink	9 585	26.12	250 360.20
Muskrat	81 985	2.54	208 241.90
Otter	272	44.81	12 188.32
Raccoon	49	21.88	1 072.12
Skunk	62	5.00	310.00
Squirrel	144 877	1.34	194 135.18
Wolf	611	95.62	58 423.82
Wolverine	103	174.72	17 996.16
Total			7 597 454.95

Registered Trappers — 2 972

Resident Trappers — 5 067

SOURCE: Fish and Wildlife Division

Table 54

Aircraft Hours Utilized by the Provincial Population Inventory Program

1982/83

	Hours
Big Game	
Moose	183.3
Deer	96.8
Caribou	81.3
Elk	115.6
Antelope	69.6
Sheep	43.4
Goat	36.9
General ungulate	81.5
Grizzly	52.2
Bird Game	
Migratory	67.6
Upland	28.1
Fur	68.7
Non-Game	169.0
Land-Use Assessment and Planning	33.7
Miscellaneous	12.0
Total	1 139.7

Table 55

Wildlife Certificate and Game Licence Sales

	Fiscal Year		1982/83 Fee $	1982/83 Total $
	1981/82	1982/83		
Resource development	164 527	162 573	5	812 865
Wildlife certificate	164 527	162 573	6	975 438
Bird game licences				
Resident	94 398	87 728	5	438 640
Non-resident	3 262	3 011	25	75 275
Non-resident alien	1 154	900	50	45 000
Big game licences (resident)				
Antelope (trophy)	1 879	1 997	20	39 940
Antelope (non-trophy)	25	1 429	10	14 290
Bear (black)	13 726	14 878	10	148 780
Bear (grizzly)	894	964	20	19 280
Cougar	154	121	20	2 420
Deer (anterless mule)	—	—	—	—
Deer (male mule)	—	—	—	—
Deer (general mule)	58 726	59 969	10	599 690
Deer (antlerless white-tailed)	—	—	—	—
Deer (male white-tailed)	—	—	—	—
Deer (general white-tailed)	74 603	77 442	20	1 548 840
Deer (Camp Wainwright)	770	761	20	15 220
Elk (antlerless)	—	—	—	—
Elk (male)	—	—	—	—
Elk (general)	31 831	33 036	10	330 360
Elk (Cypress Hills)	443	102	20	2 040
Goat	45	44	20	880
Moose (general)	65 106	63 971	10	639 710
Sheep (non-trophy)	494	792	10	7 920
Sheep (trophy)	2 676	2 863	20	57 260
Elk (F300)	—	575	20	11 500
Total	251 372	675 729	—	5 785 348
Resident authorizations				
Moose (male)	4 260	4 545	—	—
Moose (antlerless)	2 285	1 770	—	—
Elk (male)	2 100	2 520	—	—
Elk (antlerless)	3 340	3 725	—	—
Deer (male white-tailed)	350	450	—	—
Deer (antlerless white-tailed)	4 260	5 030	—	—
Deer (male mule)	1 175	1 175	—	—
Deer (antlerless mule)	3 125	3 125	—	—
Total	20 895	22 340	—	—

	Fiscal Year		1982/83 Fee $	1982/83 Total $
	1981/82	1982/83		
Big game licences (non-resident)				
Antelope (non-resident trophy)	25	31	125	3 875
Bear (black)	51	57	50	2 850
Bear (grizzly)	4	—	125	—
Guide authorization	258	299	25	7 475
Cougar	2	1	100	100
Deer (male mule) (general)	149	223	100	22 300
Moose (male) (general)	198	217	100	21 700
Sheep (trophy)	7	4	125	500
Wolf	2	2	75	150
Deer (male white-tailed) (general)	126	166	75	12 450
Elk (male) (general)	160	121	100	12 100
Total	982	1 121	—	83 500
Big game licences (non-resident alien)				
Bear (black)	431	422	100	42 200
Bear (grizzly)	23	29	250	7 250
Cougar	7	3	200	600
Deer (male mule) (general)	185	158	150	23 700
Deer (male white-tailed) (general)	140	215	150	3 225
Elk (male) (general)	237	175	200	35 000
Moose (male) (general)	718	590	200	118 000
Moose (zone one male)	579	427	100	42 700
Sheep (trophy)	81	87	250	21 750
Wolf	28	30	150	4 500
Total	2 429	2 136	—	298 925

Table 56

Angling and Fishing Licence Sales

	Fiscal Year		1982/83 Fee $	1982/83 Total $
	1981/82	1982/83		
Resource development	329 427	348 150	2	696 300
Resident angling	323 775	343 275	3	1 029 825
Non-resident (limited)	3 158	2 787	3	8 361
Non-resident (seasonal)	2 494	2 088	10	20 880
Spear fishing	1 136	1 101	3	3 303
Sturgeon angling	413	557	5	2 785
Domestic Indian/Metis	163	168	no charge	—
Fish marketing (Class A)	1	1	100	100
Fish marketing (Class B,C,D)	B,C,D 8	8	10	80
Zone commercial	700	780	50	39 000
Zone fisherman	1 430	1 805	15	27 075
Zone recreational	169	234	5	1 170
Commercial game fish farm (initial)	12	8	50	400
Commercial game fish farm (renewal)	40	37	15	555
Private game fish farm (initial)	673	596	10	5 960
Private game fish farm (renewal)	980	964	5	4 820
Restricted game fish farm	21	23	5	115
Bait fishing	45	34	25	850
Duplicate angling	—	603	2	1 206
Total	670 131	703 219	—	1 842 785

SOURCE: Fish and Wildlife Division

Alberta Energy and Natural Resources
Statement of Revenue
for the year ended March 31, 1983
(with comparative figures for the year ended March 31, 1982)
(Thousands of Dollars)

ENERGY	1982/83	1981/82
Royalties		
Crude Oil	$ 2 339 841	$ 2 179 817
Natural Gas and Products	1 873 369	1 956 294
Coal	13 950	11 920
Oil Sands	362 339	229 714
Quarrying, Mining and Other	2 864	2 628
	4 592 363	4 380 373
Rentals and Fees		
Petroleum and Natural Gas	85 351	91 007
Oil Sands	9 476	4 836
Coal	4 387	4 408
	99 214	100 251
Sales of Crown Rights	336 500	556 914
Mineral Tax	155 899	134 830
Crude Oil Export Charge	100 712	128 636*
Gross Revenue (Energy)	5 284 688	5 301 004
Less Incentive Credits		
Exploratory Drilling Incentive Credits	83 750	107 920*
Geophysical Incentive Credits	37 557	25 889*
	121 307	133 809
Net Revenue (Energy)	5 163 381	5 167 195

RENEWABLE	1982/83	1981/82
Taxes, Licences and Fees		
Fish and Wildlife Royalty and Taxes	153	226
Fishing Licences	1 704	1 615
Game Licences	4 421	4 422
Landman Licensing Fees	34	39
Forest Technology School Fees	315	293
Timber Dues and Fees	10 978	9 391
	17 605	15 986
Leases and Permits		
Cultivation Leases	930	755
Grazing Leases and Hay Permits	3 636	3 341
Public Land Leases and Permits	1 295	2 014
Right of Entry	4 430	3 394
Sand and Gravel	1 453	1 222
	11 744	10 726

Provincial/Federal Government Agreements	647	4
From Revenue-Producing Assets	1 295	529
Sales of Assets		
Homestead Sales	629	1 044
Land Sales	13 141	11 501
	13 770	12 545
Miscellaneous Revenue		
Survey Plans, Maps and Aerial Photography	297	430
Other	1 534	1 810
	1 831	2 240
Total Revenue (Renewable)	46 892	42 030
Departmental Total Revenue	$ 5 210 273	$ 5 209 225

*See note No. 2

Prepared by Financial Accounting Branch
Finances and General Services Division
September 1, 1983

Alberta Energy and Natural Resources
Statement of Expenditures
for the year ended March 31, 1983
(with comparative figures for the year ended March 31, 1982)
(Thousands of Dollars)

	1982/83	1981/82
Departmental Support Services – Program 1		
1 Central Support	$ 1 462	$ 1 374*
2 Administrative Services	9 507	7 200*
3 Policy Analysis and Planning	4 627	3 681*
4 Policy and Advisory Services	17 475	13 132*
	33 071	25 387
Resource Evaluation and Planning – Program 2		
1 Program Support	588	455
2 Resource Evaluation	11 023	9 124*
3 Resource Planning	914	777
	12 525	10 356
Minerals Management – Program 3		
1 Mineral Resources	44 869	17 233
2 Mineral Revenues	5 254	4 262
3 Oil and Gas Well Service Industry Incentives	250 155	—
4 Financial Assistance for Alsands Project	2 083	—
	302 361	21 495
Forest Resource Management – Program 4		
1 Program Support	31 596	25 636
2 Forest Land Use	6 154	5 066
3 Reforestation and Reclamation	8 122	6 643
4 Timber Management	16 332	9 245
5 Forest Protection	88 671	76 124
6 Forest Research	1 810	758
	152 685	123 472
Public Lands Management – Program 5		
1 Program Support	4 397	3 958*
2 Land Dispositions	2 081	1 905
3 Land Management	11 597	7 362*
	18 075	13 225
Fish and Wildlife Conservation – Program 6		
1 Program Support	5 924	4 897
2 Wildlife Service	4 338	4 348
3 Fisheries Service	3 594	2 270
4 Public Service and Enforcement	6 436	5 822
5 Conservation Education	1 173	899
6 Habitat Protection and Management	2 626	2 175
	24 091	20 411
Alberta Oil Sands Equity — Program 7	795	943
Foreign Ownership of Land Administration – Program 8	291	231
Surveying and Mapping Services – Program 9	8 146	6 485*

Alberta Petroleum Incentives Program – Program 10		
Administration	6 554	1 705
Gross Expenditures	558 594	223 710
Less Expenditure Recoveries		
Alberta Petroleum Incentives Program	6 554	1 705
Other	1 153	1 579
	7 707	3 284
Net Expenditures	$550 887	$220 426

*See note No. 2

Prepared by Financial Accounting Branch
Finance and General Services Division
September 1, 1983

Alberta Energy and Natural Resources
Notes to the Financial Statement
March 31, 1983

NOTE 1 Incentive Credits

Effective with the year ending March 31, 1983, the department adopted a policy of accruing Exploratory and Geophysical Incentive Credits based on the date that work was completed which entitled the applicant to that credit. Previously, credits accrued to applicants based on date that such credits were established.

NOTE 2 Comparative Figures

*The 1981/82 figures have been restated where necessary to conform to the 1982/83 presentation.

It is noteworthy that Crude Oil Export Charges were previously reported under Treasury Revenue and have been transferred to Energy and Natural Resources during 1982/83. The comparative figures for the fiscal year 1981/82 have subsequently been restated to reflect the actual amount received as compared to the estimated amount in the previous year.

NOTE 3 Statement of Expenditures

The Alberta Oil Sands Technology and Research Authority and The Alberta Petroleum Marketing Commission are not included in the Above.

Prepared by Financial Accounting Branch
Finance and General Services Division
September 1, 1983

POOR

QUALITY

ORIGINAL